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Gleanings in Bee Culture



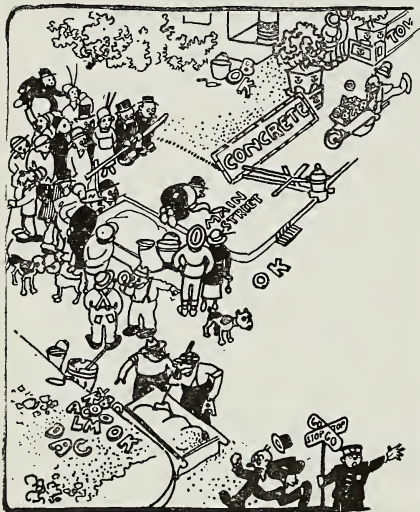
Overcoats On, and Under the Hill.

VOL. XLVIII

March, 1920

NUMBER 3

A RED LETTER DAY IN CONCRETE TOWN



That Sign for Your Apiary

**SHOULD BE MADE
THIS WINTER!**

We will mail you on application a small folder on how to make your own signs by using our all-weather-proof burned clay letters. They can be used on buildings, walks, lawns or roadside.

Write for a "Red Letter
Day in Concrete Town"

UNITILE
REGISTERED TRADE MARK

The Unitile Co., Columbus, Ohio
Dept. B

Tin Containers

A Complete Line. Your Orders Solicited for

**Friction-Top Cans and
Pails**

Five-gallon Square Cans
with Screw or Solder Cap

Packers' Cans
Open Top or Hole and Cap Styles

**Wax Sealing Preserving
Cans**

*Unexcelled manufacturing and
shipping facilities.*

W. W. Boyer & Co., Inc.
Baltimore, Maryland

"Griggs Saves You Freight"

TOLEDO

We know you are not the fellow who waits until the last minute before ordering his supplies.

We HAVE LARGE stocks of new goods to rush to you the minute your order arrives.

Send us list of goods wanted at once and receive our prices.

Those 60-lb. Cans will soon be gone; better hurry your order in at once. Two men took a ear load.

WHITE CLOVER HONEY

Can use limited amount of White Clover Honey if price is in line. FREE Catalog of BEE SUPPLIES for the asking.

BEE SWAX WANTED

Cash or exchange for supplies. We pay highest market price.

"Griggs Saves You Freight"

GRIGGS BROTHERS CO.
Dept. No. 25 Toledo, Ohio



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The Fred W. Muth Company

The GOLDEN MONTHS of OPPORTUNITY

for the successful beekeeper are

FEBRUARY, MARCH, AND APRIL

This is the time of the year to nail and paint the supplies needed for your 1920 crop of honey.

In spite of transportation difficulties and delays we are in position

to promise prompt
deliveries from our
complete stock of
famous

We Render
Your
Old Combs

and pay the market
price for the wax rendered, less 5 cents per
pound rendering
charges.

WRITE US TODAY

LEWIS BEE- WARE

Write for
Our
Catalog

If you do not receive
our catalog each year
write at once.

1920 Issue is
Now Ready

Besides, your order now will save you money, as there is a tendency for prices to advance still higher.

We are dealers in

Root's Extractors and Smokers --- Dadant's
Foundation and the Famous Lewis Beeware

When You Have Honey
for Sale

send us your sample and give best
price delivered here. We buy every
time you name an interesting price
and remit the day shipment is received. SEND US YOUR OLD
COMBS FOR RENDERING.

HONEY

BEEWAX

If You Want Prompt Shipment, Give Us Your Order Today.

THE FRED W. MUTH CO.

"The Busy Bee Men"

CINCINNATI, OHIO

Two Carloads of Superior Foundation

We had orders on hand February 1st for over two carloads of SUPERIOR FOUNDATION, approximately 60,000 pounds. Our present manufactured stock assures prompt deliveries thruout the season. Our machines have been in constant operation all winter, anticipating the heavy demand, and will be running overtime during the spring and summer months. We have doubled our Ogden factory in size and are adding additional machinery.

We also carry large stocks of SUPERIOR FOUNDATION at our Idaho Falls, Idaho, and Riverside, California, warehouses. For the convenience of our California beekeeping friends we have opened up a branch house at Riverside, Calif., where our Mr. Fred W. Redfield is in charge at present.

BEESWAX WANTED.

We require over 30 additional tons of beeswax at highest market prices during the next four months. There's a reason. Acquaint yourself with the advantages of SUPERIOR FOUNDATION if you have not yet used it.

Special Prices on Request. State Quantity Desired.

Superior Honey Company -:- Ogden, Utah
(MANUFACTURERS OF WEED PROCESS FOUNDATION)

BEE SUPPLIES

BEE SUPPLIES

SERVICE & QUALITY

Order your supplies early, so as to have everything ready for the honey flow, and save money by taking advantage of the early order cash discount. Send for our catalog--better still, send us a list of your supplies and we will be pleased to quote you.

C. H. W. WEBER & COMPANY

2146 CENTRAL AVE.

CINCINNATI, OHIO

HONEY MARKETS

There is little or no change to report in the honey market. Export demand is light, but there is a better domestic retail demand. The quotations made by the Bureau of Markets and by producers as printed below reflect market conditions generally.

U. S Government Market Reports.

HONEY ARRIVALS, FEB. 1-14.

MEDINA, O.—None reported.

SHIPPING POINT INFORMATION FEBRUARY 14.

LOS ANGELES, CALIF.—Cool, clear. Demand and movement slow, market dull, prices slightly lower. Carloads f. o. b. usual terms. Extracted, per lb., white orange blossom 18-19c; white sage, supplies light, 19c; extra light amber sage 17½-18c; light amber alfalfa 15-16c. Beeswax, in l. c. l. lots, 42c per lb.

SAN FRANCISCO, CALIF.—Cool, clear. Supplies light. Cash paid to producers: extracted, light amber sage 14-14½c.

TELEGRAPHIC REPORTS FROM IMPORTANT MARKETS.

(The prices quoted in this report, unless otherwise stated, represent the prices at which the "wholesale carlot receivers" sell to the "jobbers." Arrivals include receipts during preceding two weeks; prices are for Feb. 14 unless otherwise stated.)

BOSTON.—Supplies light, demand moderate, market steady. Sales by jobbers to grocers in small lots: Comb, New York and Vermont, mostly good quality, some light sections, best 33-37c per section, few light sections low as 30c per section; extracted and beeswax, no sales reported.

CHICAGO.—1 Colorado and approximately 100 packages by freight from Illinois arrived. Supplies liberal, demand and movement slow, market dull. Sales to jobbers: Extracted, Idahos, Colorados, and Californias, white sage and alfalfa 19-20c, amber sage and alfalfa 18-18½c per lb.; comb, 24-section cases, No. 1, \$7.00-7.25. Beeswax, supplies moderate, demand and movement moderate, market steady. Sales to jobbers, per lb., Idahos, Colorados, and Californias, light 40-43c, dark 35-37½c.

CINCINNATI.—No arrivals, demand light, practically no movement, market dull. Sales to jobbers, no honey sales reported. Beeswax, demand limited, market steady. Sales to jobbers, average yellow 45-48c per lb.

CLEVELAND.—Demand and movement good, market steady. Sales to jobbers: Western, 60-lb. cans white clover 25-26c; light amber 22½c per lb.

DENVER.—Approximate receipts 29,000 lbs. extracted and 60 cases comb. Supplies moderate, demand and movement good, market steady. Sales to jobbers: Comb, 24-section cases, No. 1, \$6.75, No. 2, \$6.30. Extracted: White 18½-20c, light amber 17½-19c. Beeswax, 40c in cash, 42c in trade.

KANSAS CITY.—Approximately 100 cases arrived since last report. Demand and movement good, market firm. Sales to jobbers: Comb, cases, Californias and Colorados, light alfalfa \$7.50-8.00; flat cases Missouri, light \$8.50-8.75. Extracted, Californias and Colorados, light amber mostly 23c per lb.

MINNEAPOLIS.—Supplies liberal. Demand good for extracted, demand slow for comb, market steady. Sales direct to retailers: Comb, Western, fancy light, 24-section cases \$7.50; extracted, Westerns, 60-lb. cans 21c, few 22c per lb.

ST. PAUL.—Supplies liberal, demand and movement moderate, market steady. Sales direct to retailers: Comb, Western, fancy light, 24-section cases \$7.25-7.50; extracted, too few sales to establish market.

PHILADELPHIA.—Practically no demand or movement, no sales reported.

ST. LOUIS.—Supplies moderate, demand and movement slow, market steady. Sales to jobbers: Extracted, per lb., Southern, amber in barrels 14-15c, in cans 15-16c; comb, practically no supplies on market, no sales reported. Beeswax, prime, per lb. 39c.

NEW YORK.—No arrivals reported. Supplies moderate, practically no demand, no sales reported. EXPORT DISTRIBUTION OF HONEY, DEC. 15-31, 1919.

Total, 141,084 pounds; to Austria-Hungary, 12,

000; to France, 13,589; to Germany, 55,456; to Netherlands, 26,200; to Switzerland, 23,996; to Canada, 6,798; China, 1,494; to all other countries, 1,551 pounds.

George Livingston,
Chief of Bureau.

Special Foreign Quotations.

LIVERPOOL.—We have very few transactions to record since our last report, owing to the dislocation caused by Christmas and New Year holidays and, of course, the usual stock-taking, during which period people are disinclined to offer honey.

Seeing the scarcity of sugar and its high prices, we look forward to a better demand for honey in the future. Chilian extracted honey is worth at the present rate of exchange about 16-17c per lb. A parcel of Cuban beeswax has been sold at about 29c per lb. Chilian would be worth 34-35c.

Liverpool, England, Jan. 23. Taylor & Son.

CUBA.—Extracted amber honey, in barrels, \$1.15 per gallon. Clean average yellow beeswax, 38c per lb.

Matanzas, Cuba, Feb. 8. A. Marzol.

Quotations From Producers.

The following are the opinions and quotations of actual honey-producers thruout the country received during the last few days:

ARIZONA.—Wholesale price producers are receiving: Extracted, 18.00 per case of two five-gallon cans; comb, averages about 25c per lb. The demand is fair, but not as good as it should be, considering conditions.—W. I. Lively.

BRITISH COLUMBIA.—Wholesale price producers are receiving for extracted 30c, comb 32c. The demand for honey increases here at this time of year, owing, no doubt, to the supply of jams, canned fruits, etc., getting depleted. The average wholesale price for the 1919 crop of honey produced in British Columbia, 172 tons in all, was 29c a pound, the whole value amounting to \$99,760.—W. J. Sheppard.

CALIFORNIA.—Wholesale price producers are receiving: Extracted, 19c, 17½, 15, and 16c; comb, \$6.50, \$5.00, and \$5.50. The demand is fair. We need rain.—A. E. Lusher.

CALIFORNIA.—Wholesale price producers are receiving for extracted 14-18c; comb 25-30c. The demand is only fair.—L. L. Andrews.

COLORADO.—Some sales of extracted honey have been made around 16c. This could have been sold at a higher price only a short time before. I have heard of no large sales of comb honey. Stocks practically cleaned up. The demand is rather quiet.—J. A. Green.

FLORIDA.—Wholesale price producers are receiving for extracted is possibly 15c. No comb honey is produced. The demand is not very good.—Ward Lamkin.

FLORIDA.—Wholesale price producers are receiving: Extracted, \$2.00-2.50 per gallon; comb, 25-30c, 8-12 oz. The demand is fairly good.—C. H. Clute.

IDAHO.—Wholesale price producers are receiving: Extracted, small lots 20c, carloads 18c; comb 10 oz. \$6.00 per case, 11 oz. \$6.25, 12½ oz. \$6.50. The demand is not good, but some improvement.—E. F. Atwater.

ILLINOIS.—Wholesale price producers are receiving: Extracted 20c; comb 25c. The demand is fairly good.—A. L. Kildow.

KANSAS.—Wholesale price producers are receiving for extracted 20c; comb all sold. The demand is not good. Bees coming fine. All packed hives have commenced rearing brood. Maples are beginning to bloom.—A. D. Raffington.

INDIANA.—No extracted being sold at wholesale prices; retails at 35c in pails, 50c bottled. No comb at any price except what is brought in from outside; retails at 40c per comb.—E. S. Miller.

MARYLAND.—Wholesale price producers are receiving for extracted 22-24c; comb 28c. The demand is not so good as in sugar shortage.—S. J. Crocker.

MASSACHUSETTS.—No honey is in hands of producers for sale at wholesale, either extracted or comb. Demand is very light.—O. M. Smith.

MICHIGAN.—I do not know of any recent sales. The demand is not good.—B. F. Kindig.

MINNESOTA.—Wholesale price producers are receiving for extracted honey 18 to 19c in Minneapolis. Producers in country districts get 25 to 30c in local market. No Minnesota comb on market; Colorado to dealers \$7.25 a case. The demand for extracted is fair, for comb poor.—Chas. Blaker.

MISSISSIPPI.—All of 1919 crop sold.—R. W. Harner.

MISSOURI.—Wholesale price producers are receiving for extracted 25c; comb \$8.40-8.50 per case. Not very much demand—too high price.—J. W. Romberger.

MISSOURI.—No extracted honey selling. Comb, 30c for job lots, Nos. 1 and 2 mixed. The demand is good. European foul brood has played havoc with local production.—Louis Macey.

NEBRASKA.—Wholesale price producers are receiving for extracted 25c; comb 35-38c. The demand is fair, owing to sugar being limited.—F. J. Harris.

NEW JERSEY.—Supply exhausted.—E. G. Carr.

NEW YORK.—Wholesale price producers are receiving: Extracted, 20-21c No. 1 white, 16c amber; comb No. 1 white \$7.00-7.20. The demand is good. Very little honey in the producer's hands. We are entirely closed out, and beekeepers are inquiring for honey to fill orders. Locally there is a great demand from consumers. Shortage of sugar helps this demand.—A. O. House.

NEW YORK.—Wholesale price producers are receiving for extracted clover 22-25c; buckwheat, 17-20c. All comb is out of producers' hands, as far as we know. The demand is not very good.—Adams & Myers.

NEW YORK.—No honey left in this county. The demand is not good. I have learned of a lot of six tons of white extracted in northern part of State being sold at 20c delivered.—F. W. Lesser.

OHIO.—Wholesale price producers are receiving for extracted 25c. No comb on market. The demand is very good.—Fred Leininger.

OKLAHOMA.—Extracted honey practically all sold. Comb honey retails for 40-50c per lb., mostly Colorado, Nos. 1 and 2, white. Extracted honey being shipped in, and the demand is only fair; retails for 35c per lb.—Charles F. Stiles.

ONTARIO.—The wholesale price producers are receiving for extracted and comb honey has not changed since report for February.—F. Eric Millen.

PENNSYLVANIA.—No extracted honey whatever in this part of the State, and the market is practically bare. Clover sells at \$1.50 retail in 5-pound pails and buckwheat at \$1.25. No comb on the market. The demand is good.—Harry Beaver.

TEXAS, LOWER RIO GRANDE VALLEY.—I know of no honey being sold wholesale in this locality. Local demand is very good. A. Lynn Stephenson.

EAST TEXAS.—Further quotations are useless, as there is no honey in the hands of producers.—T. A. Bowden.

TEXAS.—Wholesale price producers are receiving for extracted 25c but very little for sale. There is no comb honey for sale. The demand is good but no honey.—J. N. Mayes.

WASHINGTON.—Wholesale price producers are receiving for extracted 17-18c, comb \$6.00 per case. The demand is not good.—Geo. W. B. Saxton.

WISCONSIN.—Wholesale price producers are receiving: Extracted 20-25c; comb 25-35c in very small lots.—H. F. Wilson.

Advertisements Received too Late to Classify.

Package bees. Italian queens.

E. A. Harris, Albany, Ala.

Annual White Sweet Clover seed, trial packets at \$1.00 per packet, postpaid.

Henry Field Seed Co., Shenandoah, Iowa.

FOR SALE.—California Wonder Corn for seed. Doubles yield. Send for circular.

James McKee, Riverside, Calif.

FOR SALE.—Italian bees free from foul brood; also swarms in season. Inquire of

Jacob Long, Sr., Dayton, R. D. No. 1, Pa.

FOR SALE.—259 shallow extracting supers; 9 excluders. A bargain. Write

James McKee, Riverside, Calif.

FOR SALE.—Bright Italian queens, \$1.50 each; \$14.00 per doz. Ready after April 15.

T. J. Talley, Greenville, R. D. No. 4, Ala.

FOR SALE.—5 barrels of about 400 lbs. each of dark honey just extracted. Suitable only for baking or feeding bees. Absolutely free from disease. Ward Lamkin, Arcadia, Route A, Box No. 97, Fla.

FOR SALE.—Four six-frame Root automatic hand extractors for Langstroth frame. All in perfect condition. Reason for selling—am using eight-frame power extractor.

C. J. Baldrige, Homestead Farm, Kendaia, N. Y.

FOR SALE.—Summer resort located on Bear Lake, one mile from Haugen, 1½ acres of land. Bees are a good side line. Have good business accommodations for 25 people. Reason for selling, have other business. John Kubes, Haugen, Wisc.

Italian queens, the kind that are sure to please you. Untested, in April, \$1.25 each; one untested, May 1 to July 1, \$1.00; one tested, May 1 to July 1, \$1.50. Discount on large orders. Safe arrival guaranteed. L. R. Dockery, Carrizo Springs, Texas.

FOR SALE.—Used 5-gal. cans. Every one bright inside and washed outside. New corks. No leakers. Cases complete. Case of two, \$1.00; 10 cases, \$8.00. Carload if you wish. Will take honey, wax or cash.

Bruner, 3836 No. Kostner Ave., Chicago, Ills.

SOLD OUT.—Having sold out my bee and queen business will have no bees nor queens for sale this season.

G. W. Moon, 1904 Park Ave., Little Rock, Ark.

WANTED.—Around 75 colonies of bees, near S. Dak.

Fred Day, Alcester, S. Dak.

WANTED.—5 to 100 colonies of bees.

T. Wanzke, 1233 Barry Ave., Chicago, Ills.

WANTED.—Six or eight-frame extractor in first-class condition.

C. E. Martin, Minier, Ills.

WANTED.—Young man wishing to learn beekeeping, up-to-date methods. State age and habits.

Chas. Schilke, Matawan, R. D. No. 2, N. J.

WANTED.—Light second-hand power or hand saw rig. Full particulars, price first letter.

Jas. R. Conklin, Moravia, Box No. 14, N. Y.

WANTED.—Young man of good habits to work with bees for season 1920, large apiary. Terms and reference with first letter.

J. B. Merwin, Prattsville, N. Y.

WANTED.—Foundation machine, 10 or 12-inch rolls and one 4 or 8-frame extractor. Wilbrod Montpetit, St. Louis de Gonzague, Co. Beauh, Quebec, Can.

WANTED.—A position as assistant queen-breeder and handling bees. Has been my work for many years. South preferred. Address

R. Powell, 113 E. Genesee St., Syracuse, N. Y.

WANTED.—Man to tend about 300 swarms of bees, steady employment to the right party. State wages and experience in first letter.

M. S. Nordan, Mathews, Ala.

WANTED.—On mountain farm near Bluemont, Va., beekeeper who wants good location; house, garden, fuel, fruit, spring, use of horse and cow, in return for looking after the place.

J. A. Truesdell, 612 Riggs Bldg., Washington, D. C.

WANTED.—(Nearly, disease-free and in good condition) used 8 and 10-frame standard hives, also supers, excluders, and empty combs, wired. Could use few colonies healthy bees.

Lloyd W. Smith, Madison, N. J.

WANTED.—In April, one familiar with modern beekeeping practice to run small apiary (50 colonies) and help out with gardening, poultry, lawn, etc. Pleasant surroundings on modern 1,100-acre farm.

Lloyd W. Smith, Madison, N. J.

QUEENS AND BEES

WHY ARE WE THE LARGEST BREEDERS OF ITALIAN QUEENS IN THE WORLD?

You can't buy superior stock at any price. Safe arrival and satisfaction in every respect guaranteed.

UNTESTED QUEENS

To June 15th		After June 15th	
1	\$1.50	1	\$1.25
12 or more	1.25	12 or more	1.00

TESTED QUEENS

To June 15th	\$3.00	After June 15th	\$2.00
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BEES

1-pound packages	\$3.00	2-pound packages	\$5.50
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NUCLEI

1-frame	\$4.00	2-frame	\$7.00	3-frame	\$9.50
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No queens included at above prices.

Nuclei are on good combs, full of brood with plenty of bees.

FULL COLONIES

We can furnish, and can ship on date specified, full colonies of bees in new hives, good comb, and good strong colonies with **Tested Queens**:

8-frame	\$18.00	10-frame	\$20.00
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DR. MILLER'S QUEENS

Let's make this a Miller queen year. Dr. Miller has furnished us breeders from his apiaries, and we are the only ones that he furnishes breeders to. In these queens you get the fruits of the foremost beekeeper of the world. We pay Dr. Miller a Royalty on all queens sold.

To June 15th		After June 15th	
1	\$2.00	1	\$1.50
12 or more, each	1.60	12 or more, each	1.25

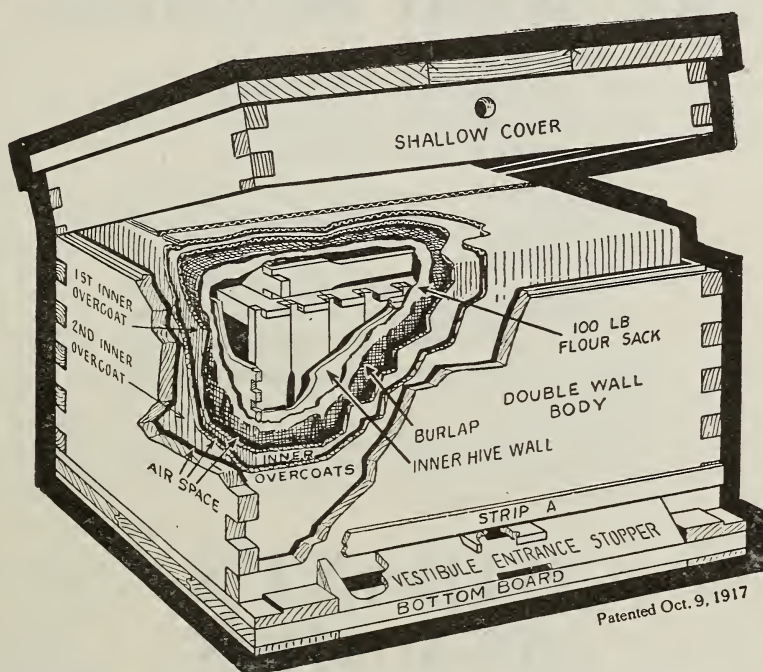
We carry a full line of Root's supplies, including the new Root-Weed foundation, Prompt Service.

THE STOVER APIARIES

Successors to
THE PENN COMPANY
Penn, Miss.

MAYHEW, MISS.

Winter Problem Solved by the Hive with an Inner Overcoat



NOW FURNISHED WITH JUMBO DEPTH OR STANDARD HOFFMAN FRAMES.

Do you know that E. D. Townsend & Son, two of Michigan's most extensive beekeepers, with their 1,100 colonies of bees, have three yards of Government tenement winter cases that they have discarded? One beekeeper speaks of these tenement winter cases, recommended by the Government, as ice boxes. With their thick walls, they are slow to warm up during an occasional warm day thruout the winter. There are occasions when one cleansing flight will result in successful wintering. Protection Hives with the Inner Overcoat will have bees bright and lively at the entrances during clear but cool days, when not a bee will be in sight at the entrances of other hives and styles of winter packing. Think of the saving in expense for cases, time and labor in packing and unpacking, and the simplicity of putting your bees safely into winter quarters with the Protection Hive as compared with the tenement winter case. With this hive you have an efficient, compact, substantial equipment without the litter of packing materials and the inconvenience of having them around. Send for special circular and 1920 catalog.

TIN HONEY PACKAGES.

2	lb. Friction top cans, cases of 24
2	lb. Friction top cans, crates of 612
2 1/2	lb. Friction top cans, cases of 24
2 1/2	lb. Friction top cans, crates of 450
5	lb. Friction top pails, cases of 12
5	lb. Friction top pails, crates of 100
5	lb. Friction top pails, crates of 203
10	lb. Friction top pails, cases of 6
10	lb. Friction top pails, crates of 113

Special Prices.

Crates of 100 five-pound pails.....	\$ 8.00
Crates of 200 five-pound pails.....	15.00
Crates of 100 ten-pound pails.....	12.50
Sixty-pound cans, two in a case, per case	1.30
Shipments made from Michigan, Ohio, Illinois and Maryland factories.	

A. G. Woodman Co., Grand Rapids, Mich., U. S. A.

We Want Beeswax

The tremendous demand for DADANT'S FOUNDATION requires that we have a large stock of beeswax on hand and in transit at all times.

We are therefore situated so that we can pay the highest prices, both in cash and in exchange for bee supplies.

Write us stating quantity and quality of beeswax you have to offer and we will give you our very best prices either f. o. b. Hamilton or your shipping point together with shipping tags and instructions.

When ordering your stock of bee supplies for your season's use, be sure to stipulate

DADANT'S FOUNDATION

Every inch, every pound, every ton, equal to any sample we ever sent out. You cannot afford not to use DADANT'S FOUNDATION.

We render combs into beeswax.

We work beeswax into DADANT'S FOUNDATION.

We buy beeswax for highest cash and trade prices.

We sell a full line of best bee supplies.

PRICES AND CATALOG FOR THE ASKING

Dadant & Sons, Hamilton, Illinois

GLEANINGS IN BEE CULTURE—EDITORIAL

MARCH, 1920

THE PROSPECTS for clover in the Eastern States are the best they have been for years. In many of the clover districts the soil was matted with the white and alsike clover last fall. Heavy snows during this winter have kept this growth of clover well protected; and as they melt away the soil will be well watered. That nothing but early drouth in the spring will be able to shut off a heavy clover flow is the prediction of most beekeepers for the coming spring. Conditions in California have greatly improved with a heavy rainfall that came on Feb. 8. The orange crop will be about normal, because the orange groves are irrigated.



Honey Prospects for 1920.

The western alfalfa crop will be about normal. There is nothing more stable than alfalfa honey. We can always depend on it year in and year out. Unfortunately, we can not say this of eastern clover nor of California sage; but the prospects for a large yield of clover will more than offset the shortage of sage, whatever that may be.

WE ARE REQUESTED to call the attention of the beekeepers of Alabama and several other Southern States, which do not provide for apiary inspection, to the new Wisconsin law which went into effect last July. Under this statute beekeepers and transportation companies are prohibited from accepting for delivery in Wisconsin any bees, comb, or used beekeeping appliances without a permit from the Wisconsin inspector of apiaries, or an inspection certificate from an official inspector of the State of origin attached to each package, crate, or bundle containing the same.



Southern Beekeepers, Take Notice.

It appears to be customary for the Alabama dealers, at least, to attach affidavits to their pound packages, stating that the honey used in making the candy has been diluted and boiled. Experience has shown that the ordinary boiling is insufficient to sterilize honey and that foul brood sometimes develops as a result of the introduction of bees in pound packages, unless they come from an apiary free from disease.

It is now too late, of course, to provide for inspection in a State in which no arrangements of that kind have been made. Consequently, it will be necessary for all dealers who are unable to furnish an inspection certificate to secure a permit from the State Entomologist of Wisconsin for this purpose. A copy of this permit may then be attached to each pound package, and a

list of all the customers of the permittee filed with the State Entomologist. It is understood that where bee diseases are apparently introduced in pound packages, permits will probably be refused in future years to the apiaries from which the bees were received. All shipments should also be accompanied by the affidavit form now used. Applications for the needed permits are to be made to S. B. Fracker, Acting State Entomologist, Madison, Wis.



IN OUR ISSUE for July, 1919, we stated that there was going to be a great shortage



Sugar for Next Fall's Feeding.

of sugar, and urged beekeepers, ere it was too late, to lay in a supply for fall feeding to prevent starvation. This statement was made after talking with one of the leading officials of the so-called Sugar Trust on the Pacific Coast, who said that there would be a million-ton shortage, and there was. We also added in our issue for November, page 705, that, while the shortage was very acute, plenty of beet sugar would be available in the early months of the year, and that was true likewise. Again we have the "hunch" that there will be another shortage next year. It seems a little early to order sugar now, especially when it is so hard to get; but the beekeepers had better be watching their chances, and some time during this spring and summer lay in a supply—especially those who live in a locality where there is no fall flow, and who, year in and year out, have to feed in order to insure safe wintering and springing. A word to the wise will be sufficient.



IN THE FEBRUARY NUMBER of Gleanings we said: "In the next issue of this



Our Advertising Guarantee.

journal we shall announce an advertising guarantee against deliberate swindlers, such as the 'Pelican Apiary,' and state the terms of such guarantee."

Here is our guarantee and its terms:

We believe that all the advertisers in this journal are trustworthy. We will make good to paid subscribers the loss of any money sent to any deliberate swindler or irresponsible advertiser by reason of any misleading advertisement that may get into our columns. We protect our subscribers against swindlers but will not be responsible for the debts of honest bankrupts sanctioned by the courts. Notice of any complaint against an advertiser must be sent to us within one month of the time of the transaction. In writing to our advertisers, mention seeing their advertisement in Gleanings in Bee Culture, in order that you may secure the benefit

of this guarantee in case you may later wish to avail yourself of it, as we require proof in case of trouble as to where you may have seen the advertisement in question. Differences or mistakes that may occur between our subscribers and honest advertisers should not be confused with dishonest transactions. We can not guarantee advertisers more than one month after the last appearance of their advertisements in our columns; but the names of regular advertisers who discontinue their advertisements and who are in good standing at the time, will be published in the first number of Gleanings after discontinuance, under a headline reading "Discontinued in Good Standing," which list will always be found at the head of our Classified Advertisements department. This will not be done (for it is not necessary) in case of temporary advertisers for "help wanted," "positions wanted," advertisers of single sales of small or second-hand articles, in which transactions the terms of bargain and payment are special, for in such cases the purchaser can, by taking care, guard his own interests. We will promptly discontinue the advertisement of any advertiser against whom a clearly valid complaint may be lodged by a subscriber, and such advertiser will not be restored (if at all) to our columns until he has satisfied such complaint. Our subscribers will be solely responsible for the terms they make with advertisers, and must use all reasonable diligence and caution in making such terms and in satisfying themselves of the condition and quality of any special article or commodity offered for sale.

We hope that the above guarantee does not need much elucidation nor comment. If it did, it would not be the right sort. A guarantee needs to be perfectly understandable by all parties concerned. We have tried to make this guarantee such. We have tried to bound it north, east, west, and south by plain words. What it guarantees, is set forth. What is not set forth in it, is not guaranteed by it.

We will live up to it. We ask both our subscribers and advertisers to help us do this.

WE HAVE RECENTLY received from several beekeepers confirmation of the report that the 1920 U. S.



A Rank Injustice to Beekeeping.

Census is going to be pitifully inaccurate in its returns as to beekeepers and beekeeping. This is because of the fact that only the regular farm schedule provides for the listing of bees and beekeeping statistics.

Let us quote from the letter of a beekeeper living in a small village in southern Ohio, who writes:

I have just had a visit from the census taker, and I was surprised when I was unable to list my 15 stands of bees, as the only schedule that had a place for the bees was the regular farm schedule. The census taker informed me that he listed as farms only lands producing more than \$250 worth per year. There will not be more than one-eighth of the bees in my township listed. Looks as if the bee associations should look after the interests of the business, and see that there is a fair census return of the business.

As the census is now being taken, thousands and thousands of beekeepers and

their colonies of bees will not be reported. Very many of the small beekeepers (and possibly all the migratory beekeepers) will be entirely ignored, and the importance of the business, not only in the eyes of the general public but of the U. S. Department of Agriculture and the U. S. Congress, greatly weakened. This is a serious consideration when it comes to securing state and national aid for beekeepers. Government officials, state and national, when making appropriations, go to the U. S. Census for their information as to the importance of a business and the number that may be benefited by governmental action.

The census of 1910 was extremely faulty in that no account of bees in cities and towns, and no record of bees and specialist beekeepers up in the mountains and on waste lands was taken. The farmer beekeepers of the country by no means represent the industry of beekeeping in the United States. At several large beekeepers' conventions held since 1910, every beekeeper present in such conventions has reported that none of his bees were reported in the census-taking. Now, it seems, the census farce of 1910 regarding bees and beekeeping is being repeated.

Why was this injustice to the beekeeper and the beekeeping business permitted in the present taking of the Census?



THE OHIO STATE Beekeepers' Association and the Extension Department of the



Beekeepers' Short Course at Columbus, O.

Ohio State University at Columbus, O., held there a very successful short course in beekeeping the last week in January. The principal speakers were Dr. E. F. Phillips and Geo. F. Demuth, of the Bureau of Entomology, Washington, D. C. There were other speakers, such as B. F. Kindig, State Apiarist, and David Running, the bee-cellar expert of Michigan; F. W. Leininger, Delphos, O., a big beekeeper and queen-breeder; Dr. Ernest Kohn, President of the Association; E. C. Cotton, State Foul-brood Inspector, and E. R. Root. Secretary J. S. Hine, one of the University professors who was present at all the meetings, did much to look after the comfort of the beekeepers. Mr. Moore, Vice-president of the Ohio State Beekeepers' Association and a reporter on the Ohio State Journal, is the man who advertised and got the beekeepers of the State together. It is worth much to have a newspaper reporter who can give the correct dope to the papers. Mr. Moore certainly did this, as the Journal was full of the proceedings of the great meeting.

The attendance was the largest and most enthusiastic of any bee meets ever held in Ohio. There were not only many backlot-ers but practically all of the large producers of the State. The latter especially acknowledged their indebtedness to Dr.

Phillips and Mr. Demuth for the many helpful tricks of the trade they had received.

Dr. Phillips and his corps of assistants have done a world of good all over the United States in propagating not only practical but scientific information on how to keep bees better. There is scarcely a large beekeeper today who having heard them does not acknowledge that these lectures have set them right on many of the problems that once seemed obscure and difficult.

The question of cellar temperature, as referred to elsewhere, has cleared up not only the atmosphere in a bee-cellar, but in a wider sense the whole atmosphere on the general subject of beekeeping. As Dr. Phillips and his associates have pointed out, the vital thing in beekeeping is good wintering. Good wintering means good colonies that are ready for the adverse weather conditions in the spring, and which will later be ready to harvest the crop.

At this particular meeting, President Kohn was at his very best. He seldom rose to his feet to introduce a speaker without raising a ripple of laughter thruout the convention hall. He was a good presiding officer, and he helped to make it possible for the large attendance to give the closest attention for three or four hours in the morning and for a like period in the afternoon.



SINCE THE MEETING at Kansas City, organizing the new American Honey Producers' League, details



The New and the Old National.

Gleanings, we have received various comments, which, on account of just going to press, we are unable to give in this issue. Some of the writers are very much pleased, and feel that the movement heralds a new era in organized beekeeping, that will mean not only a nation-wide concerted action on the part of those interested but a stabilizing of prices at a time when the honey market may tip downward during the process of the world's reconstruction.

Briefly, here are the criticisms that have come to us. One is that the old "National" name that has stood so long should not be changed. Some years ago Dr. C. C. Miller said, when the subject of reorganization was up for consideration, "Whatever you do, do not change the name." Another criticism or protest comes from the East. In fact, we have a letter from a correspondent who says, after speaking of the repeated failures of the National to reorganize on co-operative lines, "Why should I, as an Eastern beekeeper, belong to a society that aims to sell Western honey at a better price? * * * It is absurd on the face of things to expect me to join an association which will help chiefly the Western beekeeper. * * * Years ago the National tried to get lower freight rates on Western honey. I thought this a worthy

move; but I recall that a lot of the beekeepers in the East withdrew from the National because the Association was hurting them." Further on he asks if there is anything in common between the Eastern beekeeper and the Western, and then inquires whether, if the new league is organized on the line proposed, the Eastern markets would not be flooded with Western honey more than they now are.

Another criticism comes from a man who has had a large experience in organizing exchanges that are a marked success. He says that local co-operative exchanges are perfectly feasible and practicable, but that one organized on a national basis can not succeed.

Still another view is that the purpose of the new league would be in contravention of the Sherman anti-trust law, and thus be illegal; but "one who was there" says that a good lawyer said it is legal. This point should be determined beyond any question or doubt.

Still another holds that the new league will have difficulty in getting financial support to put it thru, adding that it will take from \$50,000 to \$100,000 to make even a start. Time will tell.

As to any or all of these allegations, Gleanings disclaims any thought or intention of throwing cold water on the new move, but feels that some of these statements should have careful consideration. Our columns are open for a full and candid discussion. To the criticism that the new National should not change its name, one "who was there" told the editor that it was decided to get out a wholly new charter under a new name and thus avoid any legal or other complications that might arise from the use of the old name. Further, he said there is a prejudice against the old National that would be difficult to remove. That the old National has tried several times to reorganize, and fell down, no one who knows anything about the situation will deny. But that does not necessarily mean that all efforts in the future will fail.

Gleanings will welcome any plan that will help to stabilize the honey market at a fair price; and that is, we understand, the main purpose of the new league. Fine! but let there be no mistake made in launching the new organization. We say this with a sincere desire to help, not to pull down.

In our last issue, in referring to the new league editorially we stated that its general plan "looked good," but added, "This organization, good as it is, can not succeed unless beekeepers get back of it in a substantial way with their dollars and their moral support." That is the crux of the whole situation.

The suggestion has been made that the several co-operative organizations in the West could combine under one general head; that is, one manager could act for all the exchanges and co-operative bodies now in existence. Perhaps this is the plan.

PACKAGE bees may not be one of the wonderful advances in bee-keeping, but I believe that they are to play a very large part in the future de-

velopment of the industry. Many successes have been recorded, but only a few of the many failures are reported. I believe package bees have passed the experimental stage, and that the business will continue to increase for a time. It seems quite likely, however, that there will be a slump sometime in the future, for the simple reason that the present increased interest in bee-keeping will fall off, to a more or less extent, when conditions again become normal. At the present time hundreds of people are going into the business who will not follow it up when they begin to meet with the difficulties which must come to the inexperienced. I do not mean to say that beekeeping is not going to continue growing, for I am sure it will, and it is bound to become a more popular business every year. However, there are a lot of mushrooms being started right now that are going to turn to puff balls, and loud will be the report when they burst.

Package bees are in great demand at present, because it is almost impossible to buy bees in small colony lots, and comparatively few large bee-yards are changing hands. At least, this is true in Wisconsin. They are also in demand because many beekeepers are making a new start or are increasing their holdings and cannot buy the bees in

VALUE OF PACKAGE BEES

*A Means for Quick Re-stocking.
Some Things Bee-breeders Should Do.
A Test of Twenty-five Packages*

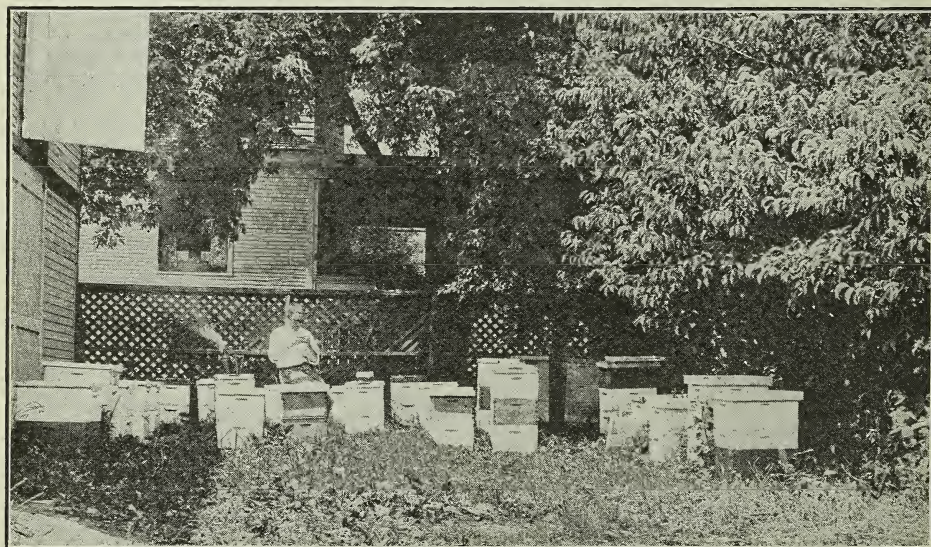
By H. F. Wilson

colonies. It is also a desirable way to secure bees, with a reasonable degree of certainty that no disease will accompany them.

At \$10 or even \$15 a colony, I believe it is cheaper to buy bees by the colony than by the package, provided the colonies are strong and in good standard hives. It is to be presumed also that the colonies will be free from disease.

A three-pound package of bees plus hive and frames with foundation will easily cost ten dollars. A colony of the same strength, with a good young queen started May first, will produce double the crop of that secured from a three-pound package on sheets of foundation.

Many of our beekeepers have also met with disastrous adventures in buying package bees, because they did not get the bees at the promised time in the spring. One beekeeper in our own State made a deal for a large number of packages, and, while his order called for early spring delivery, he was still receiving a part of his shipment in August. It would be well for bee-breeders to take note of this and put their house in order, for nothing will harm the package business more than late deliveries. I do not wish to discredit any breeders; but I do think the buyer has been getting a bad deal in many cases, especially when he has to put up the money in advance and does not get his order filled until midsummer. Surely this money could be handled thru our banking system so that the breeder will be guar-



Wilson and Fracker's 20 colonies started from two-pound packages.

anteed against loss, and the buyer will be protected in his part of the contract.

We ourselves have been dealing with a breeder, who, I believe, is doing business in a fair way. He requires only 10 per cent of the order down, with the remainder to be paid at time of delivery. This firm, furthermore, guarantees delivery and a refund when deliveries are late. Sooner or later all breeders will be compelled to follow a similar plan or do less business.

Package bees appeal to me as a means of quick restocking in sections where the number of colonies has decreased as they have in Wisconsin. There is a big demand in Wisconsin with very few colonies for sale. For the next few years, then, we must depend on package bees to fill the gaps. Some one has remarked that restocking can easily be done thru increase. Yes, but every colony of bees is being used to gather honey, and very few beekeepers want to split even a few of their colonies. It also happens for one reason or another that some beekeeper will lose 50 to 75 per cent of his yard by bad winter stores. Several thousand colonies were lost during the winter of 1918-1919 from this cause, and at least two beekeepers with over 150 colonies each are going to lose all of their bees this winter. With the present price of honey these men cannot afford to wait four or five years to restock their yards by ordinary methods of increase, and package bees are a proper investment. The average crop secured by one of these men and sold at 20 cents per pound will more than pay for the required number of packages next season.

We are continually asked for information on the value of package bees; so we determined to run a test on 25 colonies. We started in by buying a complete equipment of hives, frames, foundation, etc., for 30 colonies. An order was placed with one of our Southern breeders for 25 two-pound packages with queens, and a request made that the bees reach Madison promptly on May 1, if possible. Twelve of the packages were ordered shipped by parcel post and thirteen by express.

The parcel-post shipment arrived in splendid condition on May 1 and on May 2 were put in hives with full sheets of foundation. (The feed in this set of cages was soft candy.)

The express shipment arrived May 7, and the bees were at once put in hives with foundation. This lot arrived in poor condition, and in six packages at least half the bees were dead. (Liquid feed only accompanied the bees.) Sugar syrup made of equal parts of water and sugar was given each colony with Alexander feeders. A total of 100 pounds of sugar was used for the entire 25 colonies. Every colony of the first shipment produced a surplus, and two of them produced three full supers of honey or slightly better than 150 pounds per colony. Of this lot five swarmed in June.

As was to be expected the second lot made

a very poor showing, seven of the colonies making no surplus. The others varied from a few pounds up to 150 pounds, the surplus produced by one single colony in this lot. No other colony of this lot reached more than 75 pounds surplus (estimated). In addition to our other troubles, six of these colonies contracted American foul brood by July 1 and had to be treated. One hundred extracting combs were bought and used but too late to be of much help.

Perhaps this test is an average one, for we had our share of trials and tribulations, all of which cannot be recorded here. Even had it been worse, the investment would have been profitable. It could have been better, and under other circumstances the surplus should not have been less than 2,000 pounds.

The location of the yard was in the edge of town, but the bees had to fly across a lake so that the nearest large supply of nectar was not less than one and one-half miles. The total cost and proceeds of the venture are given so that the reader may form his own opinion of the experiment.

ACCOUNT OF H. F. WILSON & S. B. FRACKER,
BEE-YARD, 1919.

Expenses.

May 1	10 hives complete without foundation	\$ 20.00
	40 pounds of foundation, 300 sheets	30.00
	Supplies (hives, supers, wax, etc.)	165.07
	25 2-pound packages of bees	143.06
	1 sack sugar for feeding bees	10.80
May 7	1 telegram for queens	.90
June 25	Telephone call	.45
July 2	96 combs	24.96
July 7	Wedges	4.02
	Express on combs	1.52
	Can for uncapping-knife	.90
	Funnel	1.00
Aug. 15	1 dozen honey cans	9.40
	Freight on cans	.52
	½ bundle of laths	.25
	2 yards of cheese-cloth	.50
Aug. 17	2 yards of cheese-cloth (fine)	.60
Sept. 26	Freight on supplies	2.76
Oct. 1	Drayage	1.00
	2 sacks of sugar at \$11.00	22.00

Total cost of apiary to date \$439.71

Receipts.

Honey taken from hives	1,066 pounds
Money received to date for honey sold	\$235.39
Honey on hand	190 pounds

Madison, Wis.

The Two-pound Package.

From communications I have received since making public, in a previous issue of this journal, my experience with "package bees," it is evident that the subject is still being carefully studied, and many are contemplating a first venture.

The questions of prime import with these people are mainly these: When and from whom to order, what price one should be willing to pay, and what should be the manner of handling.

At the Illinois State Beekeepers' meeting last winter President Dr. A. C. Baxter stated: "In 1918 it was impossible to buy any packages. I tried and could not find any beekeeper in the United States that could

sell me bees in two-pound packages." No doubt many would-be purchasers will fail in 1920 for the same reason that Dr. Baxter failed in 1918. He did not start soon enough. I bought 54 two-pound packages in 1918 for myself and a neighbor, and the only reason I could not buy more was shortage of

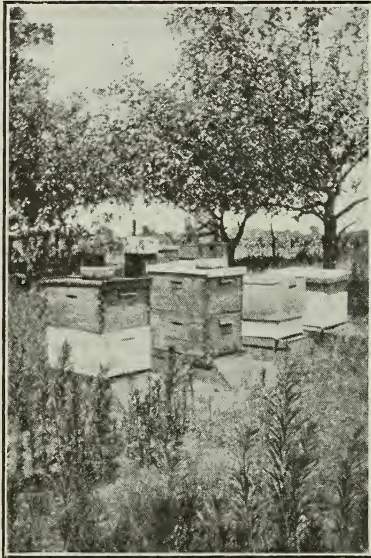
should complain of service as prompt as this.

Don't expect to buy bees at 1918 prices. My two-pound packages with queens cost me \$5.75 by parcel post last spring. I expect to pay \$7.00 this year, and do not consider them beyond the probability of a good investment at that.

As to manner of handling, have your hives in position before the bees arrive. I prefer to have two combs each about half-full of honey for each hive. Paint or sprinkle the screen of the cage with syrup. Open the cage and take out the little cage containing the queen. She should have been clipped by the shipper; if not, clip her and put her on a frame of honey with a few bees in attendance. If the weather is warm, shake the rest of the bees at the entrance and lay the cage, with the few adhering bees, against the front of the hive with its opening near the entrance. The bees will do the rest.

If the weather is cold place the cage in a vacancy made by removing frames of foundation from the hive, with the opening of the cage up in such a position that the bees can crawl directly on to the frame containing the honey and the queen. When the bees have all left the cage (which they will usually do overnight), contract the brood-chamber to three frames, by using a close-fitting division-board, and enlarge the brood-chamber gradually as the weather warms up and the bees require more room.

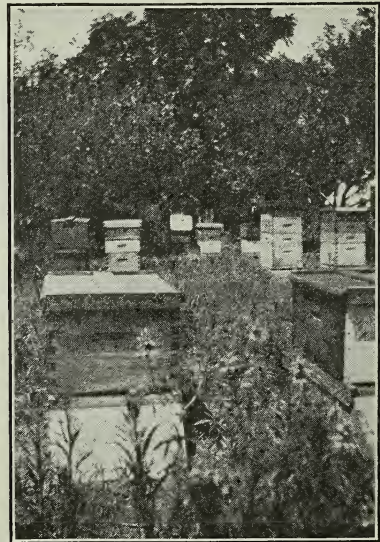
In 1917 I helped a neighbor hive 30 two-pound packages on foundation alone, and, altho the bees arrived in a snow storm and



A few colonies made from two-pound packages that averaged 60 pounds of surplus without the addition of brood to aid them in building up.

the wherewithal at this end of the line. But I placed the orders early in February, and this year I got into action about the first of January. The breeders are booking orders from about the first of December, and when they have booked all they can fill they naturally have to turn down the late comers. So, if you want any bees from the South this spring, you cannot get your order in too quickly.

Even if I were allowed to do so, it would not be fair to many reliable advertisers, with whom I have had no dealings, to suggest responsible parties from whom you might order. However, I know from experience that it does not pay to buy from the man who advertises the lowest prices. Deal with a man who has been in the business for a number of years and who has a reputation to sustain, and you are likely to be well served and satisfied in the end. Have your order booked for delivery at a specified time, and if the order is placed early you may reasonably expect to get the bees near the time mentioned. Do not be afraid to have them come early. They will stand the trip better in cool weather than in warm. Last spring my bees arrived the eighteenth of April. The order was booked for the tenth; but bad weather often gets the shipper a little behind, and no beeman



Showing a corner of Mr. Banta's apiary with wind-break in the rear, to the north.

neither of us had had any experience with package bees, we got them in the hives and fed them syrup till sufficient nectar was

coming in to make feeding unnecessary. These bees furnished about 50 pounds of surplus per colony.

We gave the feed in a shallow pan on top of the frames. An extra $\frac{3}{8}$ -inch strip was nailed all around on the inner cover, raising it just a bee-space above the pan. Enough coarse dry grass was placed in the pan to prevent the bees from drowning and the feed given every day or about as fast as the bees would take it. Around the pan were placed little blocks of wood for the bees to crawl up on. This arrangement kept the heat down close to the cluster and seemed better than feeding in an empty super.

As to whether or not it pays to give brood to these bees at the time of hiving, there is much to be considered. If the package contains much less than two pounds of

live bees (which will be the case if they do not come thru in good condition), a frame of sealed and hatching brood will be a great help and, in some cases, an absolute necessity; but great care should be exercised in handling brood in early spring. Choose a warm day and the warm part of the day. It is not required, in case the weather is unfavorable, that the brood be given directly when the bees are hived, but it may be given on the first pleasant day. A full two pounds of hardy young bees invariably does well for me without being helped in this way. If started early and they have a good queen, there will be a large force of young bees in the colony ready for the clover flow, and in this locality we get a very little surplus before that.

R. R. Banta.

Oquawka, Ill.



NOW that extracted honey is more than ever to the front, perhaps a brief history of the development of a new extractor, that can be re-

versed repeatedly at full speed, may be of general interest. Strange as it may seem, the idea of such an extractor having the principle of a centrally pivoted comb-pocket—that is, one reversing on an axis running thru the center of it—is just as old as if not older than the side-pivoted or hinged pocket of the machines generally in use. The use of the central-axis principle of reversing, theoretically, would be much easier on the combs, and in practice it is. R. F. Holtermann of Ontario, after trying out this principle in the Markle machine (mentioned further on), speaks very emphatically on this point. It does faster work, and is far easier on the combs, he says. A history of some of the early inventions leading up to the perfected machine, shown in Figs. 2 and 3, will not come amiss.

The first patent covering the centrally pivoted reversing idea was by J. K. Rudyard, as early as Aug. 22, 1882. This was a scheme for reversing thru a series of gears, and is quite similar to some late inventions supposed to be new. A later patent covering the same principle, reversing by a series of gears, was issued to A. J. Lawson, July 14, 1891. See Fig. 1, which is a photograph of the original machine. On March 28, 1893, a patent was granted to O. M. Hill covering the center-axis reversing-pocket extractor, the means for reversing being accomplished thru the use of ropes and pulleys instead of gears. This extractor is likewise very much like some other later inventions supposed to be new. On Nov. 22, 1892, a patent was

A NEW HONEY-EXTRACTOR

The History of the Development of the Honey-extractor Having Centrally Pivoted Pockets

By H. H. Root

issued to C. W. Metcalf, covering the use of chain and sprockets for reversing.

It will be noticed from the dates given thus far that all the

patents have expired, and for the last 10 or 20 years the basic principle of a center-axis reversing-sprocket extractor has been free to the public.

Why did not this idea come into use? Simply because there were mechanical difficulties, some of which we shall point out.

In later years, T. W. Livingston, evidently without the knowledge of the patents just cited, illustrated and described this same principle for reversing. See the American Bee Journal for 1909, page 96. He says he has used this ever since. Cuts of this extractor are again shown in the December issue of the same journal for 1919, page 418. Mr. Livingston overcame one of the mechanical difficulties of preventing the pockets from flying out, but at too great a cost—a cost in a commercial way that would be prohibitive.

Some five or six years ago the Weaver brothers of Kentucky built in our machine shop a centrally pivoted reversing extractor, but employed the scheme of tilting pockets for the purpose of removing the combs. This machine, while not mechanically perfect, demonstrated to us at the time, beyond any question, that the plan of a central-axis reversing-pocket extractor was correct. Ever since that, we became convinced that this was the coming way to reverse combs, for large power-driven extractors at least; but we did not exactly like the tilting pockets, because this feature introduced another moving part.

Some three years ago G. W. Markle of

Ontario exhibited a centrally pivoted pocket-reversing machine at the Toronto convention. It created a large amount of favorable comment at that meeting. It was very similar to the one patented by J. K. Rudyard in 1882, in that there was no support or bearing at the top of each pocket, but one long heavy bearing at the bottom. This made it possible to remove the combs. We considered the Markle idea, but finally abandoned it because we figured that it would not be possible, in a commercial way, to make a bottom bearing and pocket on top rigid enough, without support, to stand the terrific centrifugal strain unless the parts were made very heavy. Here, again, expense and weight would be a serious drawback.

On Nov. 6, 1917, W. W. Somerford secured a patent on the scheme for using extractor-pockets in pairs, each pair reversing automatically in opposite directions around

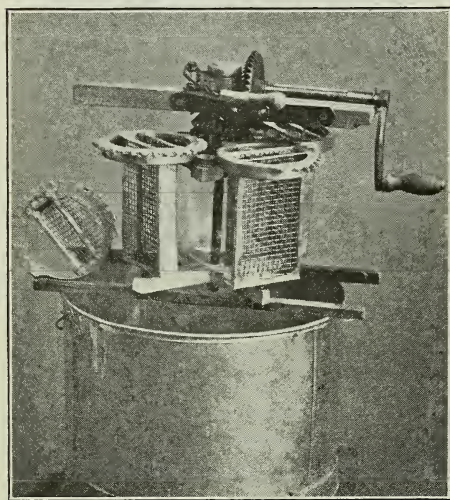


Fig. 1.—One of the first central-axis reversing comb-pocket extractors that was ever made. It was patented by Allen G. Lawson in 1891. The photograph from which this is made was taken from the original machine. If Mr. Lawson had gone a little further, he would have made a perfect working machine nearly 30 years ago.

a shaft or axis in between each pair of pockets. While this made the pockets accessible, yet it called for **continuous automatic reversing**, which we consider a mistake, as will be explained later.

From the foregoing citations it will also be seen that there are numerous applications of the general principle of pockets reversing on an axis running thru their centers rather than from one side. What are some of these applications?

First, there is the principle of **continuous reversing** in which the combs, in addition to traveling around a circumference of an extractor-reel, also turn on their own axes continuously on a line running lengthwise

thru the center of the combs. This is a simple application; but after many tests we have found that it takes longer to extract honey in this way, and is very much harder on the combs.

Second, there is the principle of having **automatic and periodic reversing**—so many revolutions of the reel, then reversing without the attention of the operator. This is an improvement over the **continuous reversing principle**; but it is faulty in that the age of the combs and the temperature and the thickness of the honey alter the requirements.

Third, there is the principle of reversing the combs at full speed or slow speed at **the will of the operator**. When, in his judgment, the combs or the thickness of the honey will permit, he touches a lever, when, almost instantly, the combs are reversed. This, in our judgment, is the **only correct principle**. At any time the operator can reverse continuously at full speed, if he so desires, by holding the reversing lever. We will refer to this further on.

The greatest mechanical difficulty, and one which all the inventors have tried to overcome in an extractor where the individual pockets reverse on a vertical axis running down thru their centers rather than on their sides, is the one of getting the combs in and out of the pockets and yet have the mechanism strong enough to stand the terrific centrifugal strain. To put a pivot at the top and bottom of the pocket would make it clearly impossible to get the combs in or to get them out unless the Weaver plan is used, and this is objectionable. If the top pivot be left out, as it must be, then some scheme must be devised to hold the tops of the pockets from flying out by centrifugal force against the sides of the can. Until the experiment is tried, one can scarcely realize what a powerful force this is. Several have tried to make a large journal at the bottom of each pocket, bracing the pocket from the bottom as in the Markle machine. Our experience and observation convinced us that this is a faulty construction. The only alternative is to put a disc or wheel at the top of each pocket and then hold all these wheels from flying outward by individual chains, or, better, by a strong flexible steel band around all of them. This latter is the plan we adopted.

After studying all of these ideas, and seeing in actual operation some of them, I hit upon the particular combination of a specially constructed pocket, chain, and sprockets. With the help and good suggestions of George L. Howk, the man who has built and designed nearly all of the automatic machines in the Root factory, a four-frame extractor was built on the new principle. While this was a hand extractor, considerable honey was extracted—enough to show that the principle was right, and to warrant the building of a larger machine.

After a vast amount of building and re-

building, altering this and that, an eight-frame machine was finally constructed. With this we extracted quite a good deal of honey here in Medina; then sent it to L. S. Griggs of Flint, Mich., one of the largest producers of honey in that State. Mr. Griggs' crop was not quite up to the normal, but he used the machine the entire season and enough to demonstrate that it was a great success. It was then brought back to Medina, when some further minor changes were made.

Removable Pockets.

One feature suggested by Mr. Howk, and a very valuable one, we believe, is that any of the pockets may be lifted out instantly for cleaning or sterilizing, just as easily as a comb may be lifted out. This feature will certainly be of practical value, for it will then be a simple matter to sterilize thoroly every part of the extractor with which the combs can come in contact. We do not believe it is possible to sterilize extractor pockets thoroly by pouring boiling water over them while they are in the extractor.

A recent improvement is in the matter

of the screen. In the new extractor the screen is not a part of the pocket, but is a separate "cage," so to speak, by itself, just large enough for the comb to slip down into it. We have found that this tends to reduce breakage of new fragile combs to a minimum.

The very fact that reversing at full speed is possible and that reversing on a center axis is easier on the combs, does not prevent a careless operator from yielding to temptation and extracting the quickest way. When the combs are new and fragile, especially when they are extracted for the first time, and when the honey is very thick, we have found that it is not advisable to reverse repeatedly at full speed; for, while there is no chance of banging the combs, it is a fact that at very high speed, especially when there is some honey on the side of the comb nearest the extractor, the outside cells will be pressed into the screen in such a way that reversing under full speed, thereby suddenly transferring the strain from one side of the comb to the other (which amounts to pulling it off suddenly from one screen and pushing it on to the other) may crack the

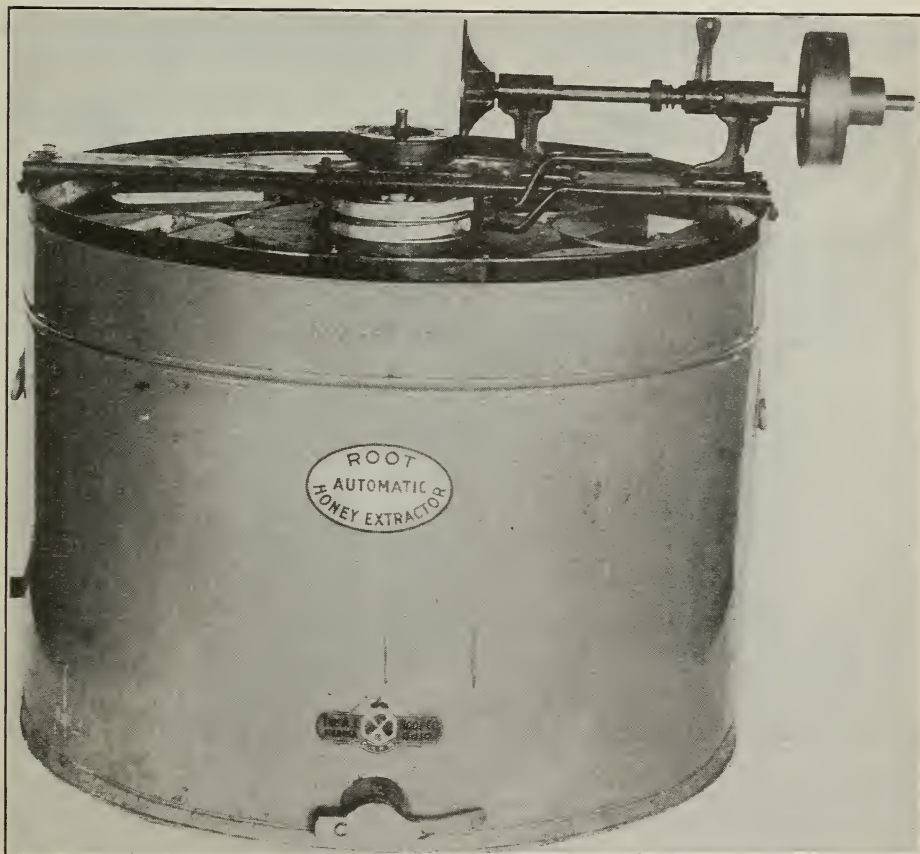


Fig. 2.—The new Buckeye central-axis reversible-pocket honey-extractor. This machine will permit of reversing at the will of the operator at any and all speeds.

combs, or, if there is any considerable amount of honey in the cells, tear the combs out of the frames altogether.

The great value of the new construction for an extracted-honey producer is that, when the conditions are right—that is, when the combs are not too new—it is possible and entirely practicable to reverse at full speed at a mere touch of the lever with less breakage of combs. Continuous automatic reversing, keeping the combs reversing all the time, is a serious mistake, as any one will find who tries. Intermittent reversing at the will of the operator, as we do it, is a success.

To reduce the danger on new fragile combs, why not reduce the proportionate speed of the reversing mechanism? In other words, why not reverse slower, even tho it takes a longer time? Simply because, if the reversing is done at too slow a speed, while the combs are in a position with the top-bars pointing toward the center of the extractor, the centrifugal force will pull the combs loose from the top-bar nearly every time. If the combs are built clear down to the bottom-bar this danger is lessened, but too many combs are not so filled out. The reversing must be done almost instantly.

Will the New Construction Supplant the Old?

It is difficult to make any prophecy. We

do not believe the new principle will entirely take the place of the old. It will doubtless be used by the large producers where the saving of combs and time is everything, and who will do the extracting themselves. The new construction, however, requires a slightly larger can. The mechanism is much heavier and more expensive. The old style of construction permits reversing more than once; but, of course, the reel has to be slowed down for the first reversing, and has to be stopped for the second reversing. This takes time. The whole matter, therefore, resolves itself into a question of the value of time, the saving in the combs, and the relative costs of the two machines. With the purchasing power of the dollar decreasing and the cost of time increasing, saving minutes and combs is an important consideration. The new machine will, undoubtedly, save both time and combs in the hands of an intelligent and careful man. Where help is incompetent or careless, the old principle would be as good or better, and somewhat cheaper in first cost. This is only another way of saying that the new extractor is not fool-proof in respect to comb breakage, but is a markedly better machine when rightly used than any hitherto made.

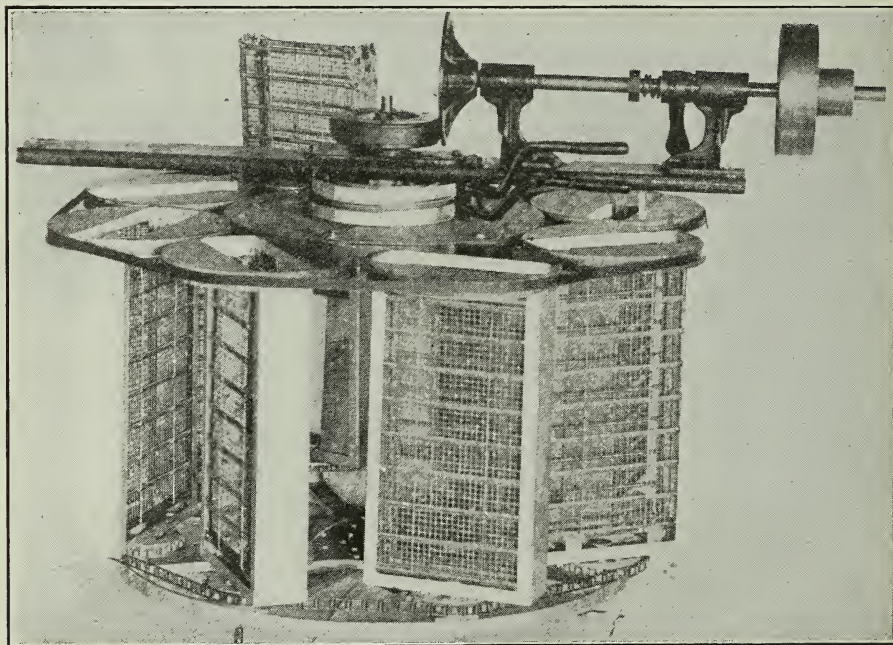


Fig. 3.—This shows the internal mechanism of the perfected Buckeye central-axis reversible extractor. The reversing is accomplished by a pull on the lower brake-lever which in combination with the chain and sprockets causes the pockets to revolve on the central pivots half a turn, when they are automatically locked, and another pressure on the lever will cause the pockets to revolve another half-turn. Continuous pressure on the lever would keep the pocket reversing continuously. This we believe to be a mistake. Each of the pockets is removable, as shown in the background. The top hand lever controls the brake that stops or slows down the reel after the combs are emptied. The steel band around the top will probably be replaced by rollers.



PROTEST AGAINST ELIMINATION

Why Honey Labels Should Retain the Words "Pure Honey."

In December Gleanings, page 797, C. M. Elfer makes some radical statements in regard to using the words "pure honey" on labels and advertising. While we agree with him that it is not necessary, so far as proving the purity of the honey, or so far as the pure food law is concerned, we do not agree with him that all labels bearing the words "pure honey" should be destroyed, and that these words should be "eliminated," if some beekeepers have good reasons for using them, and choose to do so.

While we do not know how Mr. Elfer sells his honey, we can make a close guess that he does not sell it to a mail-order trade scattered over a good many States, or else he would not make some of the statements he does. We have scattered 23,000 pounds of honey this season to this kind of trade, and have been shipping our honey to this trade for the past 8 or 10 years, dealing with all kinds of people. Many of them know little about honey, and much less about the pure food law and what it requires. We have been trying in all these years to educate our customers along these lines as best we could, and believe we have done considerable good; but I am afraid we shall not live long enough to have the coast clear for the next generation.

When we do not put the words "pure honey" in our advertisements, this is a sample of what we get: "Is your honey pure? Does it have any peculiar flavors other than honey? We want to buy some honey, but want it pure with no peculiar flavors other than honey." Another from an old customer: "Is your honey pure? I have been under the impression that it was, but wanted it straight from you. Some here have wanted to know." These two letters are a sample of many we get when these two "hackneyed" expressions are left out of the advertising, and off the label.

In selling honey to the mail-order trade there is a great amount of correspondence to be taken care of at best, and having had quite a little experience with this trade, we have become pretty well acquainted with the usual questions asked, and endeavor to cover the ground as much as possible in our advertising and price lists in order to cut out all unnecessary letter-writing, and these two words "pure honey" would be about the last to be eliminated from our advertising, etc. They have saved us many dollars in postage, stationery, and time. While they may not be necessary to prove the purity of our honey, they are essential in

our business to save time and money. Very much depends on the trade one sells to as to what is required on labels, and in advertising. If one is selling honey to customers whom he can meet face to face, many of these little things can be explained, and soon one has them educated along lines that would take far too much time and expense by correspondence.

If there is any question asked more than another by new customers in our honey trade it is the question as to whether it is pure, and when we know this, and know that these two little words put together save us both time and money, we would consider it poor business policy not to use them.

We believe, Mr. Elfer, if you could look over our mail in one season, and read some of the letters we get, that you would at least modify your opinion, if not change it completely, and incidentally do some smiling.

W. S. Pangburn.

Center Junction, Ia.

BEE HUNTING IN 1720

A Unique Account of the Method Used by Our Forefathers

The following article is a reprint of an article originally published in Latin by the Royal Society in 1720. It was afterwards translated into English, and I am indebted to the Curator of the Academy of Natural Sciences of Philadelphia for this copy. The Royal Society is an association founded in London in 1660 for the advancement of science. It has always held the foremost place among such societies in England. One of its principal publications is "The Philosophical Transactions." This paper on Bee Hunting is here reproduced word for word with no change in the lettering, punctuation, or quaint mode of expression. Altho written two centuries ago, these directions for finding "where the bees hive in the woods" are not very different from those which would be followed by the modern bee-hunter, when engaged in this fascinating pursuit.

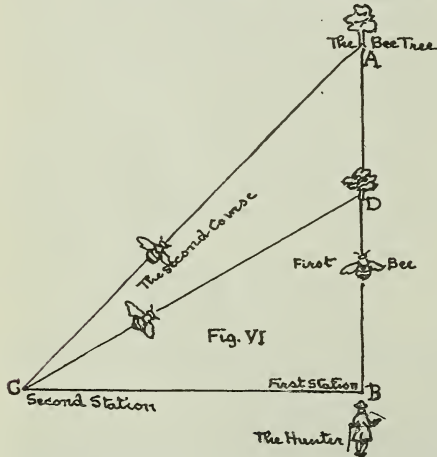
AN ACCOUNT OF A NEW METHOD IN NEW ENGLAND FOR DISCOVERING WHERE THE BEES HIVE IN THE WOODS, IN ORDER TO GET THEIR HONEY; BY MR. DUDLEY. ROYAL SOCIETY, PHILOSOPHICAL TRANSACTIONS, No. 367, A. D. 1720.

The hunter in a clear sun-shiny day takes a plate or trencher with a little sugar, honey or molasses, spread thereon; and when he gets into the woods, he sets it down on a rock or stump: This the bees soon find out; for, it is generally supposed, that a bee will smell honey or wax at above a mile's distance. In a box or other conveniency the hunter secures one or more of the bees, as they fill themselves; and after a little time, he lets one of them go, (for when one goes home from the sugar plate,

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he returns with a considerable number from the hive) observing very carefully the course of the bee there, for after he rises in the air, he flies directly on a straight course to the tree where the hive is.

For this purpose the hunter carries with him a pocket compass, his rule and other implements with a sheet of paper; and sets down the course, supposing it west, or any other point, and by this he is sure the tree must be somewhere in a west line from where he is; but he wants to know the exact distance from his station: In order to determine that, he makes an offer either north or south (suppose north) an hundred perches or rods (if it be more, it will be still more exact; because the angle



Quaint illustration of the old-time plan of locating bee-trees.

will not be so acute) then he lets go another bee, observing his course also very carefully; for this bee being loaded, will, as the first (after he is mounted to a convenient height) fly directly to the hive; this second course (as it must be called) the hunter finds to be south 54 degrees west; then there remains nothing but to find out, where the two courses intersect or, which is the same thing, the distance from B to A or from C to A for there the honey tree is. For which reason, if the course of the second bee from C had been South west by south, viz. to D; then the hive tree must have been there; for there the lines are found to intersect.

All this is founded on the straight or direct motion of bees when bound home with their honey, and this is found to be certain by the observation and experience of the hunters every year; especially, since this mathematical way of finding honey in the woods has been used with such success.

An ingenious man of my acquaintance the last year took two or three of his neighbors that knew nothing of the matter, and after he had taken his bees, set the courses the first and second bees steered, made the off-set, and, taken the distances from the two stations to the intersection, he gave orders to cut down such a tree, pointing to it; the laborers smiled, and were confident there was no honey there, for they could not perceive the tree to be hollow, or to have any hole for the bees to enter by, and would have dissuaded the gentleman from felling the tree, but he insisted on it and offered to lay them any wager that the hive was there, and so it proved, to the great surprise of the country-men.

All the bees they have in their gardens or woods, and which are now in great numbers, are the produce of such as were brought in hives from England, near a hundred years ago, and not the natural produce of this part of America; for, the first planters in New England never observed a bee in the woods, till many years after the country was settled: But what proves it beyond dispute is, that the Aborigines (the Indians) have no word in their language for a bee, as they have for all animals whatever proper to, or aboriginally of the country; and, therefore, for many years called a bee by the name of Englishman's fly.

They formerly used to find out honey in the woods, by surprising and following one bee after another by the eye, till at length they found out where the bees hived. It is observable, that when bees swarm, they never go to the northward, but to the southward, or to a point inclining that way.

Miss Josephine Morse.

So. Lancaster, Mass.

BEEKEEPING IN FRANCE

The Quaint and Queer Beehives Seen by an American Soldier

In southern France at the little village of St. Morillon, about 20 kilometers south of Bordeaux, my battalion was stationed for a three-weeks' training in machine-gun maneuvers. Between work I chanced upon six old-fashioned basket hives. These were about three feet high, eighteen inches across the bottom, and tapered up to a point at the top. The baskets were made of willow sprouts woven closely together, and the bees completed the job by filling the small openings between the weaving with propolis. The hives were protected from the rain by sheaves of straw jammed down over the point of the basket and were placed on wooden stands, a small opening for the entrance being cut out of the bottom of the basket. It was summer, and the bees were working quite industriously. I couldn't resist the temptation to peek inside; so I care-



Fig. 1.—The writer in a French apiary near Chonville, France.

fully lifted one of the baskets. I say carefully, for I didn't know what kind of a disposition a French bee has. The bees were clustered over the comb and had a goodly

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share of the sweet stuff. Just to look at it made my mouth water, and since honey is not one of the regular army rations I was naturally tempted to taste just a little. So I broke off a small piece of the honey. And talk about "Job's nectar"! Why, man, it didn't have a thing on this honey! The bees then began to realize that their com-



Fig. 2.—Soldiers eating bread and honey on stone wall at St. Mars de Loquenay, France.

pany was getting a little too fresh; so I was forced to make a hasty retreat.

Later in the fall, after Fritz had "hollered enough," our division was stationed at the little village of Chonville, 20 kilometers south of St. Mihiel. Here I found several hives of the old box-hive type, as shown in Fig. 1. I thought with these bees around there would surely be some honey in town; so I went to every grocery store in the village and at last I succeeded in finding some. Luckily I tasted it before paying out my hard-earned francs. It was the most sickening stuff I ever tasted. However, I was not to be discouraged, for my longing for honey must be satiated. So the first opportunity I had I went over to Commercy,



Fig. 3.—French family in their apiary. Note straw protection of hive at left of the man, and the hive insulated with cow manure at left of boy.

about a five-mile hike, and finally succeeded in getting a small can of about a quarter-pint capacity. It was a very attractive package, and I shelled out the equivalent of eighty cents. The old adage, "Fine feathers

don't always make fine birds," was truly applicable in this case; for the neat, attractive package contained a black, strong, sickening-smelling honey. To cap the climax there was a piece of corn husk in the center of it. As to what this was doing in there I cannot say, but I imagine it was just some of the trash that hadn't been strained out. I was surely disappointed with all French honey.

After ages and ages of waiting, early in the spring, we finally started for the embarkation point. On our way we stopped at St. Mars de Loquenay. While there we went to a grocery store and, lo and behold, there was a five-gallon jar of the finest



Fig. 4.—Frenchman standing beside upturned hive, having cow-manure insulation.

white granulated honey that I ever saw. I bet there was more honey sold in that store than there had been for the last 50 years. We also bought some butter, and then we all went up on the public square and using a stone wall for a table we gorged ourselves with this delicious food. The accompanying picture shows us thus pleasantly occupied.

I learned that this honey was raised nearby, several apiaries being in that vicinity. So a comrade and myself went on a bee-hunt. We succeeded in finding four of the quaintest hives I ever saw. They were made a great deal like those I described and told of seeing in southern France, but were smaller and as a further protection the baskets were plastered to the depth of about an inch and a half with cow manure, which

FROM THE FIELD OF EXPERIENCE

gave an insulation to cold that rivals "The Hive with an Overcoat." I turned one of them over and the bees were clustered in the top. In spite of the extreme coldness of the weather they seemed quite comfortable, and were even lively enough to resent our visit. This style of hive, as near as I was able to make out, was originated by the Belgians and seemed to serve the purpose for these poor people as well as the modern hive serves our purpose. I secured a picture of the owner's whole family, wooden shoes and all, posing in their apiary (Fig. 3). I couldn't help but wonder if that nice white honey we had been getting at the store came from that kind of a hive. Of course, these old-fashioned hives that I have mentioned are not used by the more modern beekeepers in France, but I never got the chance to find one of the more modern outfits.

Donald F. Bell.

Camp Verde, Ariz.



SURPLUS FROM JEWELWEED

Unusual Yield. Bees Gather Nectar Under Adverse Conditions

At our Minnesota State Fair last fall a number of well-known beekeepers desired to know the name of the flower from which their bees were gathering nectar, when they returned to the hives with their backs white with pollen. From the description given I knew at once that it was the jewelweed, or touch-me-not (*Impatiens biflora*), a flower adapted to pollination by bumblebees.

That season my bees were in a locality in which more jewelweed grew than I had ever seen before in one place. When I saw the young plants growing up I said, "Oh, if jewelweed were only a honey plant!" This plant grows in moist meadows, or along the borders of streams. The pendulous yellow flower spotted with reddish brown forms a conical sac with a strongly inflexed spur, capable of holding considerable nectar. The ripe seed-pods burst when touched and expel the seeds several feet, whence the plant is sometimes called touch-me-not. The anthers and stigma lie on the upper side of the flower, and when a bee seeks the nectar it must enter far into the dilated sac and necessarily dust its thorax with the white pollen. Altho honeybees nearly disappear from sight they are probably not able to drain all the nectar from the spur, which is about half the length of the sac.

The jewelweed is in bloom for a long period beginning early in August and continuing to bloom on into the month of September. I have been interested to notice that bees were able to work on this plant when rain or dew rendered it too wet to gather nectar from other plants. Owning to the nodding position of the blossom

it is impossible for rain to wash the nectar out of the spur, and a bee can enter within the sac and gather the sweet spoil without getting wet. My bees would start out soon after a rain or heavy dew and come home with their loads of honey, when it would have been far too wet for them to visit other plants.

Later in the season, after the flowers had seen their best days, altho they still yielded some nectar, and the roadsides and waste places were bright with goldenrod, the bees would go out, after a rain or on dewy mornings, and bring home their loads of jewelweed honey; but when the sun had dried the flowers they would turn to the goldenrod—not because they liked it better but probably because it yielded nectar more freely than jewelweed. I know that the nectar is very sweet, for I have broken open the spur and robbed it many a time. I do not know the flavor of the honey. But the greater part of my fall honey is from jewelweed, with some admixture from fireweed and goldenrod.

Florence Eleanor Lillie.

Wayzata, Minn.



BROOD HATCHED IN THE CELLAR

It is Not Lost by Dysentery for Want of a Cleansing Flight

Dr. Phillips tells us that brood which hatches in the cellar is lost, because young bees must have a cleansing flight; and that if they do not, they will die of dysentery. I cannot agree with him on this point, as I have, on two different occasions, proved to my satisfaction that this cleansing flight is not necessary.

Three years ago this fall we had an apiary of about 80 colonies that had been drawn on quite heavily in filling late orders, and were but little better than two-frame nuclei with very little feed; but each one contained a choice young queen which we wished to winter over for filling early orders. These were put in the cellar about Dec. 1, and two or three weeks later they were each given a cake of hard candy. This started the queens to laying, and during the latter part of January we observed brood in all stages, and young bees hatching. In the spring, when they were taken from the cellar, they were stronger than they were when put away for winter, and only three or four colonies showed any signs of dysentery.

At another time we dequeened a colony of black bees and gave them a young Italian queen just before putting them in the cellar. This hive was plainly marked, with a view of making a note of its condition in the spring, at which time we found that at least half of its bees were Italians.

Medina, O.

Mell Pritchard.

SUGAR has been selling in Washington for some time past for from 15 to 22 cents a pound. I think 20 cents is now the regular price.



* * *

On page 10 of January Gleanings, referring to the "McDonald Metal Combs" the Editor says: "Our experiments thus far would lead us to feel, however, that for straight brood-rearing or storage purposes the bees prefer combs made of wax." Last season it was our experience that frames of foundation placed beside the aluminum comb were built out and filled before that of the artificial comb. I understand some desirable improvements have been made in them the past season, and we may still hope for something of value to come of them; or, it may be, that after bees have once bred in them, they may in another season accept these combs more readily.

* * *

"The Old Lesson, Taught Again," beginning on page 16, is a most valuable editorial, that should be read over and over by those for whom it was written. It was especially appreciated by myself, as I had to clean up a lot of about the same size and condition two years ago. If the owner of this lot of honey came off with the loss of but one-third the price of his honey, he was fortunate. When will people learn wisdom, and save by a little thought and care?

* * *

The second paragraph on page 24 begins, "If there are any beekeepers in New England in need of sugar," etc. It should read Vermont instead of New England. I am sorry to say the author of "Siftings" is quite human and liable to make mistakes just as other mortals do. The State of Vermont does not expect to furnish sugar except to its own citizens.

* * *

The article on page 36, "Propolis Makes Good Floor Paint," doubtless gives the experience of the writer, but as he informs us that his propolis probably comes largely from the sweet-gum tree, its value for this purpose may not be as great when gathered from other sources. It might be worth while for beekeepers in different sections to test their propolis for this purpose, and report the results.

* * *

Speaking of the danger of fermentation Mrs. Allen, on page 28, recommends extracting only combs that are sealed solid. But how is one to follow such advice when he leaves his extracting supers on until the close of the season and after, and yet ten per cent are not sealed solid? Perhaps ten

per cent of the combs or cells will remain unsealed. We uncap the sealed combs and extract, and have no trouble, but our honey is largely from

clover. It might not work so well with some other kind. The fact is that every beekeeper must watch out and think for himself.

* * *

On page 18 J. A. Green inquires, "How Long Can They Live?" referring to the bees, and gives an example of a small colony that had survived for seven months. With all our modern knowledge of bees, so far as I know, no one can tell how long a worker bee may live. It all depends on many things. Some bees may be endowed with greater powers of endurance than others, or are longer-lived, as we say. Perhaps more will depend on the activity of the bees than on anything else. We all realize how much shorter-lived bees are in summer than in winter. The active life of summer proves far more fatal than the cold of winter. A very intelligent beekeeper was telling me not long since of finding some bees chilled and stupid with cold. A part of them he placed in a warm room where they became very active but lived only two or three days. Others were kept in a cool place; so they remained quiet or semi-torpid. These lived several weeks. Other examples might be given to show that the length of the life of a bee depends largely upon its inactivity. This would go to show that the best success in wintering would come from keeping bees just as quiet as possible from the time they are thru brooding in the early fall until the following spring. In sections where the winters are somewhat open, it is better to keep bees in hives well packed and shaded rather than in thin hives in the sun.

* * *

That item by J. L. Byer in regard to testing thermometers is well worth remembering. "Just place your thermometers in a mixture of snow and water, and if they register 32 degrees they are correct." [See A. N. Clark's "Heads of Grain," "Thermometers for Bee-cellars," page 161.—Editor.]

* * *

T. R. Gorden's method, given on page 36, for advertising and increasing the sale of honey is worthy of commendation. There is no reason why beekeepers should not be as interested in advertising their peculiar product as others are in advertising theirs. Much has been done in the last few years; but much remains to be done, if prices and demand are to keep up with the prospective supply that is likely to come with improved methods of production.

THIS flight was not by airplane, although a friend in San Antonio professed to be surprised to see me step off a prosaic Pullman. Maybe I shall live long enough to be able to cross the continent by the aerial route, but so long as the rate continues to be a dollar a minute I shall be thankful that the Puerden family purse permits me an occasional railway journey.

California and Heaven have been almost synonymous terms to me for years, but with this difference—I am in no haste to go to the latter place. So, when the head of the house announced his intention of making a business trip to California in January and invited me to go with him, there was rejoicing. And when he decided there was no reason why our sixteen-year-old son, who is completing his High School course in mid-winter, should not accompany us, there was yet greater rejoicing.

When we left Ohio snow was a foot deep on the level, it was stormy, and the air had that damp, penetrating coldness which is the most unpleasant feature of our winters. Two mornings later we awakened to the warmth, cloudless skies, and brilliantly clear air of Texas. All day long we rushed across that vast State, and the amazing thing about it to me is that we were never out of sight of one or more ranch dwellings. Indeed, from the car windows, one would believe Texas to be more thickly populated than Ohio; for, owing to the wonderfully clear air, the absence of forests, and the generally level character of the country, houses and towns were visible for miles and miles in every direction.

I imagine that Texas is beautiful when spring starts the growth, and it was not unattractive in January; for quantities of mistletoe clung to the barren branches of trees, and there were bushes covered with brilliant red berries, giving the landscape the effect of still bearing its Christmas decorations. I believe we passed enough mistletoe that day to furnish every girl in Christendom a stolen kiss on Christmas, and it was growing in such luxuriant clusters, too.

WE broke the long railroad journey by spending the night and half the next day in San Antonio, a beautiful city, both for its historic buildings of the time of the Spanish occupation and for its fine modern homes and business structures. It is impertinent for a tourist to attempt to express her opinion about a city after such a brief stay, but stored in my memory is a delightful impression of San Antonio, western in its progressiveness and enthusiasm, southern as to courtesy, interesting because

A CROSS COUNTRY FLIGHT

Stancy Puerden

of the old Spanish influence, warmed and enriched by that wonderful sunshine and clear atmosphere. I was told it is a fine locality for beekeepers.

Yes, I know Texas suffered some very bad weather just before we were there; but I have noticed fine climates are quite human in that they all have times when they behave abominably. Nothing mortifies a Southerner or Westerner more than to have to apologize for his climate, which is misbehaving temporarily.

AFTER riding all the afternoon and night, still in Texas, we reached El Paso early in the morning. Here we could not only look into two great States but over the Rio Grande into Mexico. We failed to see the bridge from the car windows, but I am quite sure at one point I could have waded across the Rio Grande. It is a most insignificant-looking stream and is distinctly disappointing to be the boundary between two great nations. Probably Uncle Sam understands his business, but if I lived near the frontier now I should want army posts pretty numerous and strong to give me any feeling of security from outlaws.

Before we left home I was told that our route over the Southern Pacific on the "Sunset Limited" was not particularly beautiful or interesting. I only wish all reality could exceed anticipation as it did that day. I have seen many places famous for their scenic interest and beauty, from the Atlantic to the Pacific, from Canada to Cuba in the blue Caribbean, but never in all my life have I seen more beauty in a day than in riding thru New Mexico and Arizona, thru so-called desert country.

All day long, on the horizon were tumbled mountain ranges, sometimes so distant as to seem unreal, their peaks in varying pastel tints floating above a low blue haze on the horizon. Sometimes the great hills drew closer so we could see their seamed, barren, and rugged outlines. But in the enchantment of that clear air, bathed in the dazzling sunshine, those harsh and rugged mountains took on the soft colorings of all the beautiful sunsets you ever saw. As the train slightly changed its direction from time to time, the colors varied until there was a shifting panorama of terra cotta, copper, rose, wine, amethyst, violet, blues ranging from turquoise and sky blue to the deepest ultramarine and navy, all blended or contrasted as no human artist could do. Cloud shadows deepened peaks to violet in sharp contrast to adjoining peaks, which were a shimmering rose in the sunshine. And in the foreground was the plain, dotted with sagebrush, enlivened by the rich green of the yucca or Spanish bayonet, by various

sorts of cacti, and by many strange plants and shrubs I could not name. Now I have always disliked a potted cactus. It is grotesque and out of place in the East, but in its desert environment it is fitting and even beautiful.

I am such a mountain lover that I have often wondered why nature could not have spared a few superfluous western mountain ranges for us in Ohio. But without the dazzling Arizona sunshine and atmosphere I am not sure her mountains would have any beauty. And that dry western air has such a trick of annihilating distance and bringing out the details of distant objects with startling distinctness.

One of the interesting features of the Arizona semi-desert country is its contradictions. How I did wish for a guide who could tell me why in one locality we saw acres of plain covered with shallow water when just a little farther on was a dry river, and in every region where there were settlers were irrigation ditches. Some of the passengers suggested the water was a mirage, which I would have liked to believe, but in some places the water came clear up to the tracks and it looked just as real and wet as in Ohio.

The porter said there had been a recent heavy rain which had flooded the tracks, and yet oftener and oftener thru the day, as we approached the desert proper, there were those dry rivers, arroyos I believe they are called, and most of them looked as dry in the channel as the Sahara desert ought to look.

Another odd thing was to see so many cattle. They must be contented with a menu quite different from that of their eastern cousins. I saw one enterprising steer nipping experimentally at a kind of a cactus. In Arizona it appears to be the fashion for cattle to wear their horns, and those horns looked like most efficient weapons, too.

Toward evening we ran into a rougher country, turning and twisting among the foothills; numerous new and interesting varieties of cacti appeared, and presently we saw the tall, branching variety, some specimens being as thick thru as a good-sized tree trunk.

TWO prosperous-looking elderly couples occupied the section just in front of ours and the one opposite. All day long they played bridge with more or less good-natured wrangling, growing less good-natured as the day wore on. At intervals the men went back for a smoke, when their wives produced embroidery and embroidered assiduously, apparently never raising their eyes to the windows to that gorgeous panorama of mountain and plain. But just at sunset, when the mountains in the east were reflecting glowing shades of copper, crimson, and rose, the card-playing, embroidering ladies awakened to the fact that there was some scenery outside, and they were voluble about it for some five minutes.

One blase young gentleman of thirteen, in his conversation with our boy, mentioned the fact that he had crossed the Atlantic six times, altho he had never before crossed our own country. Indeed, he was only traveling thru it on his way to Honolulu, and he continually deplored the slowness of the train.

I have always expected that some time in the future the nicest traveling companion I know would take me abroad. But the older I grow and the more I see of our own country, the less I care about leaving it. Why should we be so anxious to wander thru European art galleries when no human can put on canvas the beauty which the Great Artist has so generously created in our own country? Man has never equaled nature yet, and while nature has been lavish enough with beauty in all parts of the globe I don't believe there is any other country which can equal ours in variety, magnificence, and grandeur of scenery. There are hundreds of fascinating places I must see in our United States before I care to cross the ocean.

To return to the Arizona sunset, when the sudden southern night dimmed the glowing tints of the mountains on one horizon and darkened the gold sky against which the black mountains were outlined in sharp relief on the opposite horizon we went to bed to awaken amid the flowers, fruit ranches, and orange groves of southern California. Isn't it a pity trains rush one thru so much interesting country in the dark?

IT is quite the fashion now to deplore the poor service in Pullmans and grumble at the meals on the diner. Maybe we happened on an unusually favorable time to travel. At any rate, when my sister, who is spending the winter in Los Angeles, met us at the train she said, "I never before saw a woman look so fresh and rested after a railroad trip across the country. How did you do it?" I didn't do a thing but enjoy myself every minute of the day and sleep well at night in spite of being pigeon-holed in a sleeping-car berth. Maybe one reason our party slept well is because we seized every opportunity for a bit of fresh air and exercise by jumping off at station stops.

We found the meals in the diner good and reasonable in price, and it is gratifying to find individual honey on dining-car menus practically the country over.

BELOW I am giving a few recipes prepared before leaving home. Try the honey eggnog when you have that faint "all gone" feeling. The peach ice cream made with honey is also especially fine.

HONEY EGGNOG.

1 egg	1 teaspoon cocoa
1 teaspoon honey	$\frac{3}{4}$ cup milk
Few grains salt	

Break the egg in a glass, beat slightly with a fork, add the cocoa, honey, salt and
(Continued on page 181.)

WHEN winter brings day after day of rain to Tennessee, as it has done several times this winter, it drives home the realization of one great difference between this section, as suited to beekeeping, and sections much further north, Canada, for instance. In the far North the rain wouldn't be rain, often, it would be snow; and it would pile softly up around the hives, protecting them from cold winds. Then in the spring, it would gradually melt, letting the moisture into the ground when it would do so very much good.

Take one little rainy spell we had in January this past winter; it rained almost steadily for more than three days, the precipitation during that period being four inches. According to the estimate of the United States Weather Bureau, it takes about 10 inches of snow to equal 1 inch of rain. So, had this particular rain fallen as snow, it would have covered our January earth practically $3\frac{1}{2}$ feet deep — to our waists. If all our cold, splashy, dripping, soaking wetness of that time could have been thus stored in the form of deep, soft, blanketing snow, to be used later as permeating moisture sinking gently down to the roots of things, it would have made for better beekeeping conditions. But our precipitation is nearly always rain, not snow. At this writing (Feb. 7) not one flake of snow has fallen on Nashville and her environs this winter. This matter of winter rains, then, and days damp and chill, becomes one of the factors important in the wintering of our bees. Moreover, the spring moisture so necessary for the swift coming of the clover depends entirely upon spring rains, where there are no melting snows. Let those who will, laugh at the continual harping of beekeepers on the word "locality"; the countless variations in conditions make the beekeepers of one part of the country stagger under problems utterly unknown, perhaps, to those of some other section; while at the same time they may tread a veritable primrose way as to other conditions, the envied of all observers. Locality, Horatio, locality.

* * *

How does it happen that bees never sting anybody's grandfather? They never did, you know. Anyway, there is never a gathering of people that someone among them did not have either an uncle or a grandfather who kept bees, and they never, never stung him. Even out at Peabody College last month, when I gave a talk on beekeeping at an evening round-table of county-agents-to-be gathered before an open fire, it was the same story. "Grandfather swarmed them and robbed them, and never got stung. But just

Beekeeping as a Side Line

Grace Allen

let me go near them!" Of course, tho, there's one thing to be remembered about Grandfather — except for thus skillfully "swarming" them and

"robbing" them, he didn't do much to them; you know, in years gone by. He seldom ran any risk. His apiarian career was singularly free of manipulations. There were relatively few chances to get stung. Incidentally, he didn't get much honey either. But now that grandfathers and uncles and all of us are facing the open hive somewhat oftener, gentle motions and bee-proof veils are better things to depend on than any traditions of favoritism, or any vague hope of inheriting Grandfather's happy lot—unread, unhoneeyed, and unstung.

We had a delightful taste of Virginia hospitality that night at Peabody College, by the way; the Virginia club had had a party and there were baskets of loaves and fishes left. So after the talk we were taken behind the scenes and refreshed with sandwiches and coffee and friendly courtesy.

* * *

While we have never done a mail-order business, we have often mailed out extracted honey to friends or members of the family. This has always been in friction-top tin containers, which Mr. Allen packed most skillfully and thoroughly. These have always been accepted at the postoffice without protest until within the last few weeks. Now the window clerk refuses to accept honey except in screwtop containers.

* * *

A High School boy of Nashville bought two colonies last fall, his first bees. That was an unfortunate time to buy, unless one could know just how things were inside. These bees were in box hives, and all he knew about them was that one was considerably heavier than the other, and that the man he bought them from was "a good old fellow." As the weeks went by, the pile of dead bees grew suspiciously large in front of this light hive. One warm day he opened it. The bees still in the box were as dead as those outside, and there was not an ounce of honey left. The other hive was still heavy, with bees flying. Fortunately for this beginner, the "good old fellow" agreed to give him another colony in place of the one that died. But "never again" says the lad, "will I buy bees in box hives in the fall."

When this young lad, utterly inexperienced, first visited our yard, he surprised us by knowing what things were, when we called them by name—queen, brood, super, queen-excluder, etc.—and he knew what part they played in the hive. Some good instinct had led him to get hold of a government bulletin

and a supply catalog, even before getting his bees. He had studied them both pretty thoroly. Apparently he knew the catalog from Alexander Feeders to Zinc Sheets. I commend this reading practice to others—consistently, too, for I did it myself—not the catalogs, tho. They terrify me to this day. But for six months before I ever saw the inside of a hive of bees, that is from October to March, I was steadily reading Gleanings, a bit blindly at first, to be sure, yet with constantly increasing understanding. We bought A B C before we bought bees, and when that first colony came, with no one to show us how we opened the hive, found the first queen we had ever seen, clipped her with manicure scissors and much trembling and entire success, and passed solemn judgment on the question of the general condition of things. Visiting other yards is the easiest way to learn; yet when one knows in the fall that he is going to buy in the spring, those long winter months ought to be made good use of by careful reading and study.

* * *

Nearly everyone knows that Maurice Maeterlinck, the great Belgian dramatist, is in the United States. We thought he was coming to Nashville to lecture. And I was one great thrill! But the negotiations fell thru. It was hard to know whether that part of me that loves page after page of verbal beauty, or the part that loves bees, was more disappointed. But when we later learned that his speaking English had not proved equal to the demands of lectures, and the remaining lectures were to be given in French, our disappointment, while by no means lessened, took on a somewhat different tone. Even tho they do not care for the strange and wonderful beauty of "Peleas and Melisande" and "Barbe Bleue" and the other strange and wonderful plays, nearly everyone had read and loved "The Blue Bird"; while great hosts, even of those who know nothing else of bees but this great book, have been fascinated by "The Life of the Bee."

There are some beekeepers of broad experience and signal success, some men of learning and science, who advise beginners against the reading of this book. "Don't pay any attention to such a work," they say; "read A B C or Phillips or Pellett or Miller or Gleanings and then you'll learn something." To me that's a little like saying read only the Book of Proverbs with its "Hear, my son, the instruction of a father," and not the Psalms chanting majestically, "Lift up your heads, O ye gates! And be ye lifted up, ye everlasting doors! And the King of Glory will come in"; like knowing the Ten Commandments with their "Thou shalt not kill—steal—bear false witness", and not the prophets with their exalted phrases, "The earth shall be filled with the glory of the Lord as the waters cover the sea"—with their thundered, "Let

justice roll down as waters and righteousness as an overflowing stream."—with their noble simplicity of "What doth the Lord require of thee, but to do justly and to love mercy and to walk humbly with thy God?"; like making a study of the spectrum, with its waves of light, 390 millimicrons long in the violet and lengthening to 770 millimicrons long in the red, and never standing with lifted eyes before the rainbow, or feeling the responsive surge in Wordsworth's

"My heart leaps up when I behold
A rainbow in the sky."

Oh, that way with books will never do—it is not half good enough. Over and over, repeatedly, would I urge solid study, *thoro* mastery of facts and principles; but just as often and with perhaps more earnestness do I cry out for the eternal reaching out of our spirits towards beauty and grace and the inspiration of something not to be measured nor weighed nor set down in rules, but to be drawn into our inmost souls and made forever a part of us.

So it seems to me that every beekeeper, especially every sideline beekeeper, to whom the bees may frankly mean something more vital than dollars and cents alone, may well read and love "The Life of the Bee." Not as a text-book should he read it, for not as a text-book was it written; nor as a text-book should it be judged. See, in his first chapter, the author says: "It is not my intention to write a treatise on apiculture, or on practical beekeeping. Excellent works of the kind abound in all civilized countries * * * Dadant * * * Cook, Cheshire, Cowan, Root, etc. * * * Nor is this book to be a scientific monogram on *Apis Mellifica* * * * I wish to speak of the bees very simply, as one speaks of a subject one knows and loves. * * * The reader of this book will not learn therefore how to manage a hive."

That is frank and honest and removes the beautiful volume at once from the class of text-books, to be judged wholly on its own merits. But there are thousands who waive the privilege of judging it at all—they merely love it.

* * *

IN SPRING.

Earth wears her winter outwardly,
But the tender spring
She draws from her own spacious heart
Where she has held a place apart
To do her dreaming in.

Then as she may she lays aside
Bitterness and chill,
To spread her woven dreaming out
On all the grass and trees about
And over every hill.

I wish all hearts were dreaming hearts.
Then a mood like spring
Would clothe in beauty every thought,
And deeds of woven dreaming wrought
Make life a gracious thing.



FROM NORTH, EAST, WEST AND SOUTH



In Northern California.—We are again passing thru another winter with a shortage of rain. In the northern part of our district the rainfall is but one-third of the normal, and in the southern part less than half the normal amount has fallen. The foothill honey trees and shrubs will be the greatest sufferers, as the deeper soil is lacking in sufficient moisture to insure the proper vigorous growth which results in the best nectar-secreting conditions during spring. Such plants, then, as manzanita, wild cherry, poison oak, sage, yerba santa, cascara, sumac, wild alfalfa, and wild buckwheat are considerably below par at this writing (Feb. 5), and will need several inches of rain this month and next if even half a crop is to be expected from these sources. The willow along the rivers is now in bloom and during the warmer hours of the day is worked quite freely.

Answering a letter of a correspondent relative to the two principal brood diseases, the editor of the California Honey Bowl in the October issue, page 9, makes the following statement: "Friend R. I have for years believed that European and American foul brood was one and the same thing. As you say, different stages of the disease cause it to look like different diseases." Again, answering a correspondent on page 15 I quote the following: "* * * and right now I will take the opportunity to mention the name of another foul brood which is the worst of all, and does more to keep bees from turning out a profit to the bee growers than all the other diseases put together. It is the invisible bee disease." Owing to the fact that not a few subscribers to the California Honey Bowl are likewise subscribers to this journal, the writer believes that it is his duty to warn beginners in beekeeping that there is a difference between European foul brood and American foul brood. During the past few years California beekeepers have lost several thousand colonies because they could not differentiate these two diseases. Elsewhere in the same issue of the California Honey Bowl the editor recommends introducing a few drones into each nucleus so as to insure the mating of the queen and says, "As the queens fly, drones fly with them and the queens are mated with drones from their own hives." Following this plan presumably, one of the editor's correspondents writes that he introduced "about 2 drones to each hive that had virgins and fed a syrup. Today is a clear day and I have every right to expect a mating." The writer has never seen anything to indicate that virgins and drones possessing the same colony odor showed any greater attractiveness, one for the other. Furthermore, he does not recall ever having seen such a statement in print.

The exports of honey from California by water to European ports for the year 1919 amounted to 3,687 cases. During January there arrived in San Francisco from the Hawaiian Islands 511 tons of honey.

Modesto, Calif.

M. C. Richter.

* * *

In Texas.—The beekeepers of Texas are justly proud of the fact that in the newly formed American Honey Producers' League they are represented by two officers. E. G. LeSturgeon of San Antonio is president of the new organization; and F. B. Paddock, formerly of College Station but now of Ames, Iowa, is one of the directors. While Paddock is no longer in Texas the Texas beekeepers know that he will yet look after their interests.

The condition of the honey plants of the State is still normal. From every section come reports that prospects of a horsemint crop were never better. In the semiarid section the abundant rainfall of the past year caused most of the chaparral plants to produce an enormous growth of wood; should rainy weather continue, it is probable that these plants will again this summer produce wood instead of fruit. If dry weather occurs from and after March, a big yield may be expected from huajilla, catclaw, mesquite, and the other chaparral plants. Over most of the State between Jan. 20 and Feb. 1, mistletoe, elms, peach, and several other plants were furnishing pollen for the bees. As early as Jan. 20 large areas south of San Antonio were yellow with the early Texas primrose, *Oenothera luciniata grandis* B. Bees were collecting pollen from it abundantly. Three species of composite plants were also in bloom, supplying pollen and slight amounts of nectar. At College Station, Feb. 3, the bees were bringing in much pollen. The spring beauty, *Claytonia virginica*, is blooming abundantly, and, along with elm, mistletoe, and peach, is furnishing pollen as well as small amounts of nectar. It seems from this that the natural impulse for extensive brood-rearing comes between Jan. 15 and Feb. 1.

The Texas Honey Producers' Association held their annual meeting in San Antonio Jan. 20. As a proof of their satisfactory service, the old officers were re-elected. An eight per cent dividend in cash and a twenty-five per cent dividend in stock were issued. The capital stock was increased from \$15,000 to \$50,000. The results obtained by this organization are equaled by few other co-operative bodies.

Director Youngblood announces that C. S. Rude of Garden City, Kan., has been secured as deputy foul-brood inspector to take the place of W. E. Jackson, who resigned that position last November to take up commercial work. Dr. M. C. Tanquary, the



FROM NORTH, EAST, WEST AND SOUTH



new State Entomologist, and Mr. Rude will begin work on Feb. 9.

During the past year many of the beekeepers of southwest Texas have been somewhat disturbed because the honey plant agarita, *Berberis trifoliolata*, was on the list of plants mentioned as carriers of the black stem rust of the small grains, given in Farmers' Bulletin 1058, "Destroy the Common Barberry." Agarita was included in this list because all native barberries were suspected. Dr. J. J. Taubenhaus of the experiment station is authority for the statement that agarita is not a carrier of rust, and as there is but a small acreage of small grain in the agarita country little damage would be done even if this plant did carry the rust.

A number of nectar flows of obscure origin exist in Texas. Several species of oak are reported as giving a nectar flow at blooming time. Last year certain post oaks were, to the casual observer, secreting nectar from nectaries located on the catkins and at bases of the bud scales. In many places, especially in central Texas, walnut and pecan are reported as nectar-producers. Whether this is true nectar or a secretion from insect or insect injury is yet to be determined. In the live-oak gall we have a peculiar condition. In all parts of Texas where live oak grows, nectar is collected from these galls from August until winter. This gall is a woody growth, caused by the work of a wasplike insect. This nectar is not secreted by the insect but by the woody growth, and it is in no way similar to the aphid secretion called honeydew.

Because of the various activities in bee circles the past year the county beekeepers' associations are more active than they have been for years. In many counties where there has been little interest the associations have elected new officers and outlined good programs for the coming year.

College Station, Tex. H. B. Parks.

* * *

In Iowa.—The beekeepers of Marshall County perfected a county association at a meeting in Marshalltown on January 24. This meeting was called by the county agent in co-operation with a few beekeepers who were interested in organization. In preparing the mailing list for notices of this meeting it was found that there were more than 125 people in the county who are interested in beekeeping. The meeting was very well attended, considering the weather, and the interest displayed in the meeting was far above the average. The program included talks by F. B. Paddock, State Apiarist, and E. W. Atkins, Extension Specialist from the State College. The "Value of Organization" was discussed by Mr. Paddock, and "Preparation for the Coming Season" was the topic

of the talk by Mr. Atkins. The organization will bring the beekeepers of the county in much closer contact, and thru the county agent the assistance of the extension department will be brought to the county. During the coming year it is planned to hold a series of meetings thruout the county, at which will be discussed the methods of better beekeeping. The association hopes to begin its good work at once by a co-operative order for bee supplies. It is expected that the matter of marketing the honey crop for the coming season will be given consideration before the crop is ready to be disposed of. Plans are being made to establish a demonstration apiary in connection with the extension work that will be done in the county during the coming year. By means of this the members of the association will have an opportunity to study the effects of the improved methods for honey production.

During the month of December another county, Hardin, perfected the organization of a beekeepers' association. The efforts of F. H. Stacey, formerly a director of the Iowa Beekeepers' Association, are shown in this organization. The beekeepers of Hardin County have also arranged for the extension work in beekeeping to be conducted during the coming year. They are expecting to complete arrangements for the establishment of a demonstration apiary for the beekeepers of that county. The matter of marketing honey will be given proper attention by the association.

The organization of these two county associations can be said to be the direct effect of the movement started at the last Des Moines convention. There are now 13 counties organized, and at least six more are expecting to perfect an association in the near future. The amount of good which can come from these associations, scattered over the State for the uplift of the industry, is beyond estimate. The beekeepers are rapidly appreciating the benefit of co-operation.

There is now available to the beekeepers of this and other States an Advanced Correspondence Course in Beekeeping. Those who have completed the elementary course which has been offered during the past two years will welcome this opportunity to learn more of the exact details of beekeeping. There are, no doubt, many beekeepers who are producing honey profitably who want still more information concerning the substantial facts of beekeeping. This course is composed of 15 lessons, based on the text, "Langstroth on the Honey Bee, Revised by Dadant." Further information on this course can be obtained from the Extension Department at Ames.

The State Apiarist has recently undertaken a survey of the beekeeping industry of the State. This big task needs the co-



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operation of every beekeeper, for the results will be valuable only in proportion to the assistance given. This vital information has been lacking in this State, and it is hoped that the beekeepers will appreciate the value of this endeavor. A letter was sent to 3,500 beekeepers, and there are, no doubt, many more who should be interested in this work. The results of this work will be given to the beekeepers as soon as it is possible to compile the returns.

The State Apiarist Report for 1918 has been mailed from the office of the State Printer to the paid-up members of the Association for 1918. Other beekeepers of the State who are interested in this publication should write to the State Apiarist at Ames, to make arrangements to secure a copy of this report.

Arrangements are now well under way for the exhibit of the beekeepers of Iowa at the Mid-West Horticultural Show, which will be held this year at Council Bluffs in November. There will be plenty of good prizes for honey, which should attract entries from every section of the State. A new feature will be a large prize for the best exhibit by a county association. Plans should be made now by individuals and associations to enter exhibits.

The organization of the American Honey Producers' League is of great interest to every beekeeper in this State. Everyone will undoubtedly receive complete information on the objects of the League, and it is fully expected that at the annual meeting of the Iowa Beekeepers' Association next fall action will be taken to ratify the League and membership will be secured.

The necessary action of authorities in calling off the beekeepers' school came as a matter of regret to many over the State. There is no doubt but that such action was advisable under the epidemic conditions. At this time definite plans for the school to be held later have not been completed, and just what will be done is hard to say. On the part of many who could not attend the Short Course, there was a very strong tendency to enroll in one of the correspondence courses. This has led those in charge to feel that concentrated effort on the correspondence courses might prove very valuable to the beekeepers of the State. Beekeepers from many other States are enrolling in one of the correspondence courses.

Ames, Iowa.

F. B. Paddock.

* * *

In Ontario. In the last issue of *Gleanings* I mentioned that Wm. Agar had left his bees in New Ontario all alone for the summer, after having piled eight full-depth supers on each colony. Possibly many readers will be wondering where the brood-nest was located when he went up in the fall to take off the honey, no exclud-

ers having been used. Contrary at least to what I would have expected, the queen in every case was in the old brood-nest, altho a few of the colonies had small patches of brood in supers next to the brood-nest.

In a late issue I gave what were current prices of clover seed here in Ontario; but during the last few days seed has taken another big jump, and first-class alsike is now quoted up to \$34.00 a bushel, red clover \$37.00, and sweet clover \$19.50. Just how these extreme prices will work out so far as seeding next spring is concerned, is a question. Perhaps the seed is so dear that farmers will hesitate to buy it, even if the lure of big prices another season is expected, tho by no means a sure thing. These very high prices do mean that a big acreage of sweet clover will be sown, as it is much surer of a "catch" than alsike or red clover; so they will reason that the risk of total loss is not so great as if sowing the other clovers.

The ground has been continually covered with snow since the New Year came in; so clover now wintering should be faring all right. As to weather we have had during this period since snow came—well, it has been very, very cold altho milder since February came along. January gave temperatures down below zero so frequently that it became monotonous, and the January thaw, that some say *always* does come, did not come this year till February. How are the bees wintering? Really, I cannot recall a winter when I have gone into the yards as little as I have done this season. I noticed the other day at one apiary, which I went to for the first time since last fall, that two colonies with all natural stores were showing signs of dysentery, while others in the yard, all with some sugar syrup, appeared to be all right. But the extremely long spell of very cold weather is bound to have a bad effect on the bees especially where there has been little snow protection around the hives. Where colonies are short of stores or have inferior stores, a season like the present spells disaster. On the other hand, where the bees have abundance of first-class stores they usually seem able to stand about anything we may have in the way of winter weather, provided they are packed in a half-decent way.

Having mentioned that I had built a cellar last fall and that some bees were put in the same, naturally I have received quite a lot of letters from good friends giving suggestions as to ventilation, temperature, etc. The great majority of my correspondents were from Ontario, but some of the States were represented too, all the way from Ohio to Wisconsin. Incidentally, I might say that my cellar is not proving a success as now constructed. It is too damp for the temperature as low as it is—43 degrees all the time. Moisture forms on the



FROM NORTH, EAST, WEST AND SOUTH



ceiling in great drops and the bees are not as quiet as they should be, with, I should judge, too high a death rate—at least I think there are too many dead bees on the floor for the number of colonies in the cellar. But I started to mention this cellar again because of having just read in the February issue an account of how the bees are wintering in that big Medina repository. Forty-eight degrees is mentioned as the temperature at which the bees there are the quietest; while on the other hand, with but a single exception, all my correspondents want nothing higher than 45 and have no objection if it is a few degrees lower than that. One of these beekeepers who favors a low temperature, winters his bees in three different cellars, and he has any amount of ventilation, with temperatures getting as low as freezing at times if I understand him right, and yet he says he rarely loses a colony unless by mice getting in. Some of these bees are never looked at from the time they are put in till they are taken out. This man is one of our most extensive producers in Ontario, having had about two carloads of honey from clover this past year. He says that, with the high temperatures advised by some authorities, he would lose two-thirds of his bees. I do not know who is right; but I am quite sure that the present cellar I am using would be better with more fresh air coming in, and I am not sure but that an improvement would be noticeable if it was a few degrees warmer.

Dealers in supplies and bees report a very keen demand for spring delivery—especially so in regard to bees. But bees seem rather hard to pick up here in Ontario, doubtless due to so many beginners entering the game. As to getting bees from the South, just now Uncle Sam does not seem to want our money, and with discounts ranging around 15 per cent or higher it is a serious handicap to the persons getting bees from over the line.

Sugar has advanced \$2.50 a hundred wholesale, and it is now quoted at Toronto at \$14.71. J. L. Byer.

Markham, Ont.

* * *

In North Carolina.—The North Carolina Beekeepers' Association, in session in Greensboro Jan. 9 and 10, received with enthusiastic approval a suggestion by Franklin Sherman, State Entomologist and retiring president of the association, that plans be launched for making the 1922 session of the State Association a great Beekeepers' Conference for the whole Southeastern section of the country, to include Virginia, Tennessee, South Carolina, Georgia, Florida, Alabama, Louisiana, and possibly Texas. It is planned to hold the sessions in Charlotte, a North Carolina city with railroad and hotel facilities

that peculiarly adapt this point for the convenient and economical assembling of such a conference. The plan is to include not only the leading beekeepers of this State and of the Southern States, but also to secure the attendance of authorities in beekeeping from the North and West as well, such as Dr. E. F. Phillips, apiculturist for the United States Government, Editor E. R. Root of *Gleanings in Bee Culture*, and others. There is every indication now that the North Carolina beekeepers will undertake to get together such a conference of beekeepers, the State Association being now in quite a flourishing condition.

The attendance at the State convention at Greensboro was especially large, with many of the smaller "back lot" beekeepers as well as the commercial end of the business attending. An entirely new staff of officers was chosen for the next year, headed by J. M. Gibbs, Reidsville, as president. The other officers include W. W. King, Wilmington, vice-president; J. E. Echert, Raleigh, secretary-treasurer; R. W. Ethridge of Selma and W. D. Monroe of Chadbourne, members of the executive committee, along with the officers previously named as directors ex officio.

E. L. Kirkham, extensive beekeeper of Washington, N. C., caught the attention and special interest of the convention in a presentation of a well-thought-out plan for co-operative buying of supplies and for the sale of bee products. While some thought the State to be scarcely developed sufficiently in bee culture to justify a state-wide co-operative organization that could be operated economically, the association voted to instruct the new executive committee to investigate carefully and make report with recommendations to the next annual convention, which will probably be held either at Goldsboro, Wilmington, or Washington, N. C., the eastern beekeepers being entitled to have the next convention in their part of the State. The executive committee selects the time and the place, the time, of course, to be, as usual, early in January.

The convention received quite favorably a suggestion by Franklin Sherman, retiring president, that there be a midsummer special meeting of the Association at some convenient point in the Western Carolina mountains, Asheville, Hendersonville, or some other easily accessible mountain resort where business and pleasure can be most happily blended in the program.

North Carolina now has nearly 200,000 colonies of bees, with the percentage of those represented in the membership of the State Beekeepers' Association constantly increasing; and the application of improved methods of bee culture is also constantly on the increase.

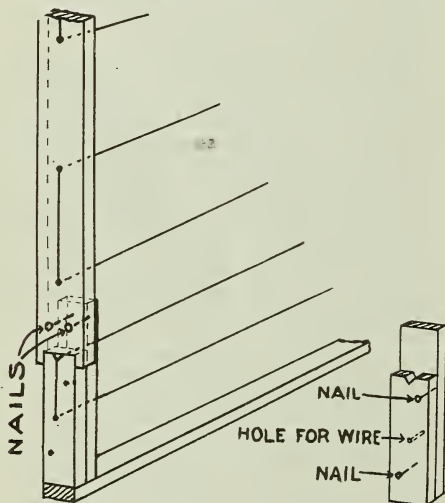
W. J. Martin.

Wilmington, N. C.

HEADS OF GRAIN FROM DIFFERENT FIELDS

To Convert a Hoff-Jumbo Frame.

Take two sticks of wood $\frac{3}{4} \times \frac{3}{8}$, and one $2\frac{3}{8}$ and the other 3 inches long. Make a V-shaped cut in shorter piece as shown in the cut. Nail them together. Pierce two holes, one at the bottom of the V-shaped cut thru the longer piece, and the other thru both pieces midway down. To set in place, take the bottom-bar off the frame. Adjust a block in each groove, with the longer piece turned in, which will give a smooth surface outside, driving two nails in each. Replace



Showing the extension piece separate and after being attached to the end-bar.

the bottom-bar. Wire the added piece thru the holes previously made, and imbed a two-inch piece of foundation in wires extending $\frac{1}{4}$ inch above the upper wire, which the bees will connect in a short time. The end piece may be made of one piece, which any supply house will furnish on order. It will be necessary to have a rim for the hives $2\frac{1}{8}$ inches deep for either single or double-walled hives.

If it is desired to have $1\frac{1}{2}$ -inch spacing instead of $1\frac{3}{8}$, take a metal spacer and divide it in halves. Nail them on the frame on opposite diagonal corners, which will give nine frames to a ten-frame hive.

Medina, O.

J. E. Thompson.

Need of Repellent Sprays.

Some years ago I insisted that a repellent of some kind should be added to spray material so that poisoned blossoms would not be visited by bees, and possibly poisoned branches and sods under trees would not be molested by cattle, sheep, or poultry. The effort to ignore the spray-

poison question is not solving the question at all in the interest of beekeeping. A good, loud, healthy roar from the beekeepers would set our experiment stations to work to find the remedy needed. The clover-honey flow has sharply declined with the advent of spraying, and there is not yet as thoro spraying as there will be in the future. My beekeeping has been at a standstill for several years, due to the uncertainty of both the crop and the business itself. The orchard business, however, is growing extensively. In fact, the man who can not produce one or two or more ears of apples is not considered in the business. A proper repellent added to or instead of poison, when proved successful and when required of the orchardist, would greatly benefit beekeeping.

Bladen, O.

Fowler's Reply to Dr. Miller.

Let Dr. Miller read, on page 19, lines 3 and 4 of my article, "I hope to prove that to let the drones take care of themselves is a fallacy;" and then read in his article of June, middle of last column, page 369, "Well, if we are not to rear drones from the best queen, what are we to do about drones? Don't do anything." He will then see that I was simply trying to prove to him by figures that to do nothing about the drones is a fallacy.

My mind is still at sea to know how the Doctor or anyone else can "breed from the best" and "don't do anything" about the drones.

C. E. Fowler.

Hammonton, N. J.

Keeps His Bees in the Attic.

I am a beginner with a year's experience, but I feel that I have been fairly successful, as I obtained last year 100 pounds of surplus from two hives in a year of almost total failure for the vicinity of Portland. I divided one hive in August for increase, and these are my very best colonies this year, due to young queens and stimulative feeding to increase brood-rearing. We had an ideal spring in 1919. On April 15 one hive had 12 frames of brood and the others 8 and 10, and I secured 35 pounds of surplus from fruit blossom from the three colonies, and increased to four strong colonies.

I like fall division for this locality, after the main crop; and as we have only a slight fall flow—just enough to build up colonies, running to the first of October—they build up nicely for winter with the help of a quart of thin syrup.

My apiary of four hives is in my attic and third-story room, owing to lack of yard space. Next year I expect to start an out-apiary. While single-walled hives are suf-

HEADS OF GRAIN FROM DIFFERENT FIELDS

ficient here, I like the chaff hive and am using it. That is why I secured my surplus from fruit this year, as my colonies built up early.

A. E. Meserve.

Portland, Ore.

A Side-line City Beekeeper

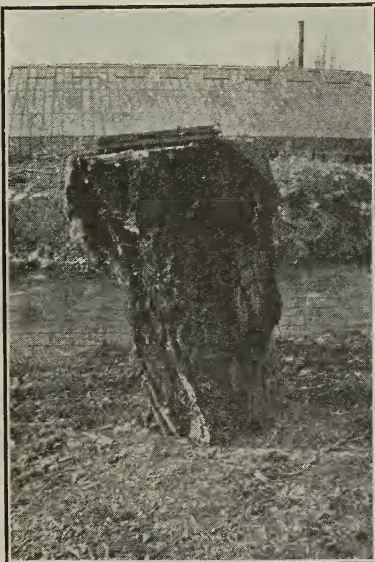
I am a side-line beekeeper and take a great deal of pleasure in the work, as I find it fills in admirably with my professional work as a veterinarian. The industry has received a setback in this valley, during the last ten years, by the advent of the alfalfa weevil; but sweet



Mr. Philpott's back-lot apiary.

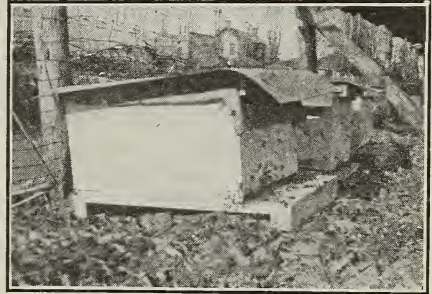
clover is gaining in popularity here and, no doubt, will be followed by an increase in honey production.

I have 25 colonies on my lot here, only one block from the main street, and have never had any complaints come to me for keeping them.



The stump hive.

The stump shown in the illustration is a section out of a poplar tree, in which a swarm of my bees took up quarters a year



Hives in the Philpott apiary.

ago last summer. I cut the tree down in December during an extremely cold spell, without trouble or injury to the bees, judging from the activity they showed last Sunday.

L. B. Philpott.

Provo, Utah.

Thermometers for Bee Cellars.

Mr. Byer, in January Gleanings, has done beekeepers a favor by calling attention to inaccurate thermometers, as, no doubt, some cellar-wintering failures have been due solely to a higher or lower temperature than indicated by the thermometer used.

The writer has had occasion to test thermometers more or less every year for more than 20 years, and has quite frequently found some that vary 3 to 4 degrees at some points of the scale. A thermometer may register perfectly accurately at 32 degrees and at 212 degrees, and still be wrong to the extent of 3 or 4 degrees at some intermediate points of the scale. So the freezing-point test, mentioned by Mr. Byer, only establishes one point on the scale, which might be correct when most of the other points on the same scale are wrong.

The accuracy of a thermometer thruout its length depends mainly on uniformity of diameter of the bore. It requires great skill to draw out a glass tube and leave a perfectly uniform internal diameter. A glass-blower who is very expert at the work draws high wages and is not commonly employed on the cheaper grades of thermometers. Yet only those thermometers accurate between 40 degrees and 50 degrees Fahr. are safe for determining cellar temperatures.

Lansing, Mich.

A. N. Clark.

[Gleanings has been trying to obtain a certified thermometer for degrees between 40 and 50—not with the idea of making any money but as an accommodation to those who, having the welfare of hundreds of colonies at stake, need accuracy to the frac-

HEADS OF GRAIN FROM DIFFERENT FIELDS

tional part of a degree. Spirit thermometers, that is, those having red liquid instead of mercury, are apt to be very inaccurate, and even high-grade mercury thermometers may vary as much as a degree. The certified thermometers for the whole scale, as our correspondent says, are altogether too expensive. We hope, in an early issue, to make some announcement of a reliable instrument for 40 to 50 degrees.—Editor.]

Pays to Study Beekeeping.

I am enclosing a picture that I took of my apiary last summer.

The sixth hive from the left produced 300 pounds of extracted honey, and the average was over 100 pounds. Half was comb honey, and those that I run for extracted were supplied with foundation only. This is a prairie country, with the fields mostly of corn and oats. Several neighbors got no honey from their bees. I think it pays to study bee culture, if one intends keeping bees at all.

Lohrville, Ia.

Chas. L. Ruschill.

Wintering Well in Zero Weather.

There are very few regular beemen in this county. Colonies here are strong on increase rather than on production of honey. Several Idaho parties buy up stands here and send them to that State where the yield of honey is better. I am told that out of 200 colonies Inspector Johnson, living near Boise, Ida., has only 60 remaining colonies, the loss being caused by improper spraying in his section. The year 1919 was a good year for honey in Washington County, the scattered beekeepers securing 25 to 35 cents per pound, in pound carton or box. Tho we had 20 de-

grees below zero, my bees have wintered well so far, with very little loss. This extreme weather came as a surprise, since this is so mild a climate that we use no packing. A water-proof cover or long shed is the usual plan. I expect to sell my increase to more unfortunate beekeepers, and have been offered splendid prices. If we can't produce the honey in sufficient quantities, we can supply the bees in proper shape to ship to the place where they can produce in paying amounts.

Hillsboro, Ore.

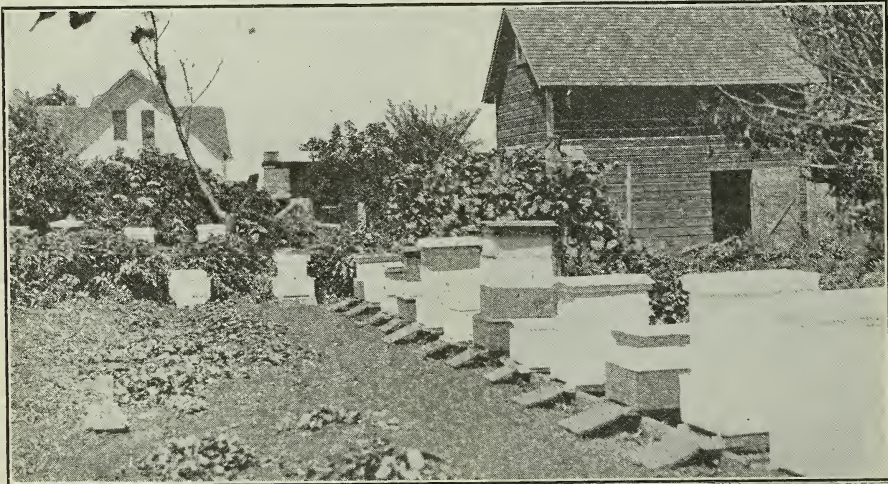
Fred A. Everett.

Disastrous Bee Year in Australia.

As I predicted some time ago would be the case, this season has proved a complete failure in Australia, and in some localities it has proved a disaster. Many apiaries perished of sheer starvation. In my locality, which is nearly 500 miles west from Sydney, there are practically no bees to be found. They all perished of starvation and want of water.

The greatest pest of Australia—rabbits—died out in this district, tho two years ago there were millions of them here, and they were multiplying with alarming rapidity. Cattle, horses, and sheep are perishing by the thousands, and the country lies parched and barren. There is not a blade of grass nor a weed to be found in hundreds of miles here, so you can picture what times beekeepers are having here now.

I have a little orchard under irrigation; and, altho it is in a very sad condition now for want of water, the green is still there, and it served as an attraction to starved beasts of the bush. Here they come in thousands as soon as drouth begins to be felt,



There is a 300-pound-surplus colony in this Iowa apiary.

HEADS OF GRAIN FROM DIFFERENT FIELDS

in the hope, of course, of having a feed. Birds, ants, and beetles found no difficulty in achieving their object; but the rabbits encountered wire netting, and, incredible as it may appear, they started to grind the wire with their teeth, and in a few nights succeeded in making a few holes in the fence.

The ants are real pests here at any time; but this year they are a real menace in orchard and beeyard, in the house, kitchen, and even in a bedroom. Some of them sting, and their sting is more painful than that of a bee. Some discharge a fluid with a sickening smell, so that if they once interfere with food they render it uneatable. This season the ants took possession of our scanty bee pastures, and so there was nothing left for the poor bees but to perish. The ants would take nectar out of blossoms even before the blossoms were opened sufficiently for the bees to enter, either by eating a hole in a bud or by entering the bud thru extremely small openings in the folds of the bud. A bee never dares enter a blossom already monopolized by ants. If it does, it will be most savagely attacked and destroyed. Yet the bee can live here; it can survive the drouth with a little help, and

pay handsomely in good seasons. So the A B C and X Y Z of Bee Culture is right in its opinion that "bees can live wherever human beings can." T. Volkofsky.

Mount Boppy, N. S. W., Australia, Dec. 26, 1919.

Unusual Disappearance of Queens.

On page 800 of December Gleanings, Ed. W. Frisby asks what could have caused the strange disappearance of his queens. I think, perhaps, I may be able to throw a little light on this subject. Since Mr. Frisby said the only way he could requeen was to buy queens, he evidently lives in a locality where there are lots of bee-eating birds, and, as the queens fly slowly and steadily, they are easily caught by these bee-birds, and thus the young queens when out to be mated are lost in their flight. On the other hand the queens he bought were mostly mated and, therefore, never exposed themselves to the bee-birds.

Millston, Wis.

Otto Scholze.

[While this does not explain the loss of mated queens, it seems a very plausible explanation of the loss of virgins.—Editor.]

High Prices.—By Bill Mellvir

(With apologies to Walt Mason.)

Now all day long I cuss or weep, because the prices are so steep; for when I linger in a store, the way they rob me makes me sore. And when I order bee supplies I'm stung by profiteering guys, who should be dangling from a rope and forced to give away their dope. I need some supers and some hives, some frames and extra honey-knives; some comb foundation and some wire, a pencil and a brand-new lyre. I need a smoker and a veil; I need a hammer and a nail. I need some movies on the screen, some tires and some gasoline. But all these things I can not buy, because the prices are so high. The only way to stop my tears would be to lynch the profiteers. But for the things I have to sell, I have another tale to tell, which illustrates the other side and can not justly be denied. I have some beeyards hereabouts. My high-brow bees are noble scouts. They spring each

year great tanks of sweets, which I am selling on the streets. And when on buoyant legs I go, to sell a fragrant ton or so of bee-kissed honey, by the tierce, the price I get is something fierce. And when a customer would kick and fire at me a high-priced brick, I give convincing reasons why my prices penetrate the sky. The clover on my neighbors' farms on high-priced ground now spreads its charms. It grew from many high-priced seeds right in among expensive weeds. Some days the nectar in this bloom comes oozing out to get some room. My high-priced bees, with high-priced zeal, go forth and all this nectar steal. On gleeful wings they tote it home to mow away in high-priced comb. Then when it's ready to extract, and in expensive cans be packed, my high-priced time demands its share, which leaves for profit naught but tare.



HAVING last month made definite arrangements for the purchase of the colony or colonies of bees, the necessary beekeeping supplies

should now be ordered in readiness for the arrival of the colonies of bees, unless by good fortune the bees and the supplies have both been purchased of a nearby beekeeper. Later in the spring shipments are bound to be delayed, and therefore it will be the part of wisdom to place one's order immediately, if purchase has to be made of a beekeepers' supply house.

Books and Magazines.

Those who are really interested in bees will begin their list of supplies with some of the best bee books now on the market and will also subscribe for at least one of the leading bee journals. The beekeepers' supply catalog with its generous illustrations will also give a fund of information; but it is hardly necessary to advise the enthusiastic beginner to obtain all the information possible concerning bees, for he will not only read all he can find on the subject, but will also supplement this by most enlightening visits with neighboring beekeepers.

Making the Choice, Comb Honey or Extracted?

The honey which the bees produce in excess of their winter needs is called surplus honey. This may be stored in small boxes called sections, which hold about one pound of honey each and are sold with the honey; or it may be stored in frames holding from three to six pounds, the honey being cut out and sold as chunk honey or extracted from the combs and the same frames of combs used repeatedly year after year. The honey produced in the sections is called comb honey, and that extracted from the combs is called extracted honey.

Now at the very outset it will be necessary to decide whether to produce comb honey or extracted, for, as just explained, the equipment in the two cases will differ. There are several good reasons why the average beginner will find it to his advantage to produce extracted rather than comb honey.

For the first year, the comb and the extracted-honey outfits do not differ materially in price, except for the extractor; but in succeeding years the advantage is all in favor of the extracted-honey outfit; for the same combs in which the bees store honey the first year may be used repeatedly year after year, while the sections of foundation in which comb honey is stored must be replaced at considerable cost every season.

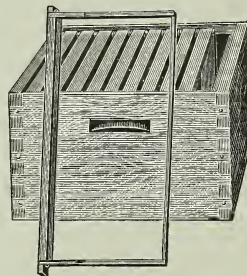
Comb is made of wax, which is a secretion from certain glands of the bees; and for the production of a pound of wax it is probably necessary for the bees to consume

TALKS TO BEGINNERS

By Iona Fowls

from five to fifteen pounds of honey, which might otherwise be sold as surplus. Therefore, besides the extra cost of supplies the beekeeper loses con-

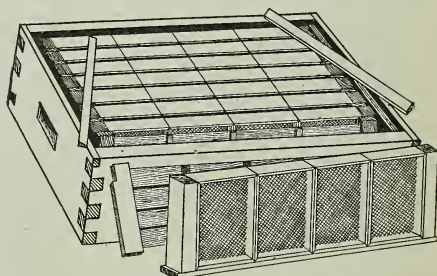
siderably from the fact that bees run for comb honey are compelled each year to build all the comb in which they store their surplus honey. Such comb would quite likely contain as much as three pounds of wax



Standard hive body with empty frames. See page 166 for frames after being filled with foundation.

and might therefore require 15 or more pounds of honey for its production.

Comb-honey production requires far more skill in order to produce a good crop, and at the same time keep down swarming. The section boxes are so much smaller than the combs the bees naturally build that bees do not enter them as readily as they do the large combs used in extracted-honey production. Therefore, it is sometimes necessary to use certain inducements to get the bees started in section supers. Also, the extracted-honey man finds that giving an abundance of room helps greatly in the prevention of swarming, while the comb-honey man is compelled to keep his colonies more crowded; for otherwise the end of the season will find him with a lot of unfinished sections. Extracting-combs of ripe honey one-third



Comb-honey super and sections.

or more unsealed will, when extracted, result in first-class honey. Sections one-third sealed must be sold at a low price.

Furthermore, extracted honey may be produced in many localities and in many sea-

sons when comb honey would be an absolute failure; for, in order that any quantity of comb be built, it is necessary that the nights be warm, as it is during the warm nights that most of the wax is secreted and the combs built.

Oftentimes a beginner is able to find a larger beekeeper in his own locality who will be willing to do his extracting for a small sum. We have found that even one cent a pound is a good bargain on both sides. If one prefers the fun of doing his own extracting (and there is a real pleasure in it), he will be able to purchase a two-frame extractor at a moderate price. And this size will be quite large enough for some time to come. And when he later decides to go into the business a little heavier it will, doubtless, be possible to sell the small extractor and purchase a larger one, either new or second-hand.

We advise, therefore, that the beginner use extracting-combs rather than sections, and produce either chunk honey or preferably extracted. For the sake of those, however, who greatly prefer comb honey and find a keen delight in the beauty of the snow-white section just as it comes from the hive, we intend describing the outfit for comb as well as extracted honey and in a later issue the management necessary for the production of both.

Outfit for Extracted Honey.

For extracted-honey production the smallest practical outfit should consist of a complete hive with fixtures and supers—a bee-brush, bee-hat, smoker, hive-tool, queen-excluder, bee-escape board, uncapping-knife, and a honey-extractor. This provides for only one colony of bees. It would be distinctly to the beginner's advantage to double or triple the number of bee-escape boards, queen-excluders, supers, and hives with contained fixtures; for with two or three colonies he would have a chance for comparison, and, we believe, would learn beekeeping much faster.

A single-walled hive exactly identical with the deep super may be used, but in this case it will be necessary to provide also a winter packing case if the colony is to be wintered outside. Therefore we consider the double-walled hive much more practical for the beginner, and, accordingly, recommend the double-walled ten-frame hive equipped with ten frames containing full sheets of foundation, metal telescope cover, inner case, chaff tray, division-board, bottom-board, entrance-closer, two or three deep or four or five shallow supers furnished with frames containing full sheets of foundation. The hive body, or lower story of the hive, rests immediately upon the floor-board which has at the front an entrance-contractor for regulating the size of the entrance. At each upper end of this box or hive is a metal support, or rabbet, holding suspended lengthwise of the body ten movable Langstroth frames $9\frac{1}{8} \times 17\frac{5}{8}$ inches in

size. Inside of these frames, attached to the top-bar by means of wax and supported by fine wires, are full sheets of foundation, or beeswax stamped with an impression of the natural base and central walls of honey-comb. During the honey flow, or while the bees are being fed, new wax is added to these shallow walls, and the foundation built out into comb for storing honey and raising young bees. Here in this lower hive or lower story, called the brood-chamber, all the young bees are raised, the queen usually being allowed to lay eggs only in this story.

As soon as the bees seem to need more room there is placed above the brood-chamber a queen-excluder, which is an arrangement of perforated zinc or of wire rods, which allows the worker bees to pass freely



Parts of single-walled comb-honey hive.

back and forth between the lower and the upper chambers, but excludes the queen from the upper story on account of her larger size. When producing extracted honey this excluder is necessary in order to keep the queen from laying in the supers or upper stories that contain the surplus honey. A few beekeepers allow the queen access to any or all of the supers, but we can not recommend this; for, besides the extra trouble and inconvenience, the practice also results in a poorer grade of honey.

Over the queen-excluder is placed the super filled with frames of foundation. The super is a plain dovetailed box without top or bottom. The inside dimensions may be the same as that of the lower double-walled

brood-chamber, or it may be shallower. Some prefer shallow rather than deep supers, as they are lighter, more easily handled, less liable to breakage when extracting, may be put on early in the spring with less loss of heat from the brood, and make it possible to keep separate, in different supers, different flows of honeys varying in color and flavor, such as clover and buckwheat. Some advocate deep supers so that all the frames in the hive will be interchangeable, which is certainly a handy arrangement. Others compromise by having one deep super for each hive and two or three shallow ones. This arrangement makes it possible to give the queen access to two stories when desired, and yet retain most of the advantages of shallow supers. Over the super is placed a thin inner cover, or early in the season when no super is being used this cover is placed just above the brood-chamber. Above this is the large telescoping cover. The chaff tray, which is to be filled with leaves and placed over the colony during the winter, and the tight-fitting division-board, that is slightly larger than an ordinary frame but may be suspended in the hive in the same way as a frame when contracting the colony for winter, will not be needed during the summer and may be stored away until ready to pack the bees for winter. It would hardly pay for the beginner to buy the division-board since he could easily make one himself. It may be of thin wood and should be

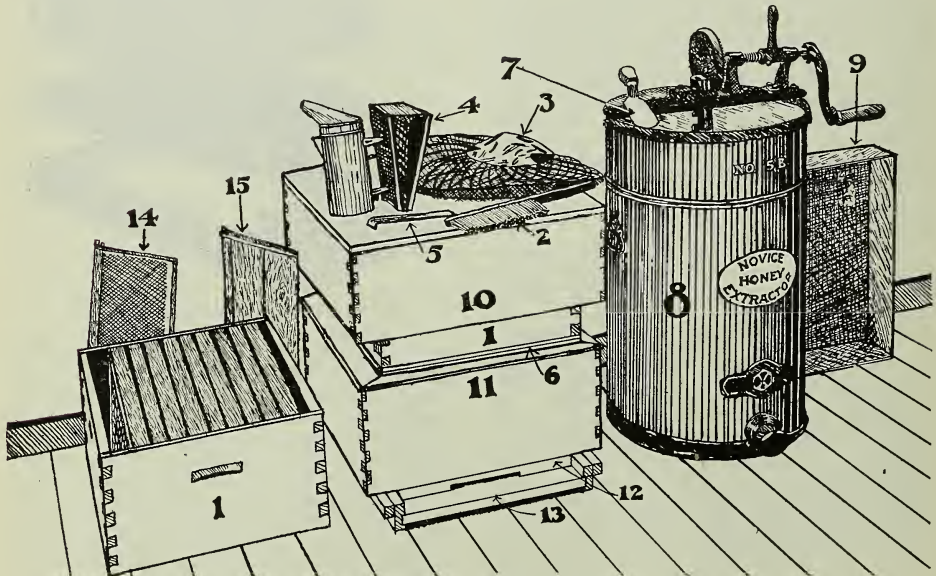
made to fit the hive tightly so that bees cannot pass beyond it.

Outfit for Comb-honey Producers.

The equipment for the production of comb honey is just the same as the one given for extracted-honey production except the uncapping-knife, queen-excluder, and extractor. Also, instead of the extracting-supers, three or four comb-honey supers filled with sections containing full sheets of foundation will be needed. There are several styles of sections, but we recommend either the $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{8}$ beeway section super or the $4 \times 5 \times 1\frac{1}{8}$ plain section super. The sections of the latter super instead of being square are rectangular, are a little more artistic in looks, and appear to hold a little more honey than they really do. For these reasons they are preferred by many.

A Few Suggestions.

These outfits give all that is absolutely necessary, but it would be a good plan to have an extra hive on hand to use in case of any possible swarm. One or two extra supers with included fixtures may also come in handy. The first hive should be purchased nailed and painted (designated NP in the catalogs). With this for a pattern one may later enjoy nailing up his own supplies, in which case he may then purchase somewhat cheaper by buying in the flat or knocked down (KD). As a last word of caution we urge that the supplies be ordered immediately in order to avoid probable later delays.



EXTRACTED-HONEY OUTFIT

- 1, Extracted-honey super; 2, bee-brush; 3, bee-hat and veil; 4, smoker; 5, hive-tool; 6, queen-excluder; 7, honey-knife; 8, extractor; 9, tray for winter packing; 10, telescope cover; 11, double-walled hive; 12, entrance-closer; 13, bottom-board; 14, frame of foundation; 15, tight-fitting division-board; 16, inner cover over (1) but not shown in cut.

I HAVE been reading in the A B C and X Y Z of Bee Culture the articles on tupelo gum honey of Florida. We have the same conditions here in southeast Texas. The banks of the Neches River are lined on either side with both the white and black tupelo gum. This timber is from one to two miles thick. Would not the source of nectar be as good here as in Florida? I have not had time to test the possibilities of it yet. I started the year with one colony and have built up to 25 strong colonies for spring. The bees start to working here in February and March if the weather is right.—Wm. Meador, Jefferson County, Tex.

"I used to have two or three thermometers hanging side by side. Sometimes one would read highest and sometimes the other. This is, no doubt, caused by the tubes not being the same at different places. That being the case two thermometers might agree at zero or at 32 degrees and might read several degrees different about 45 and 50."—Geo. M. Thomson, Greene County, Ia.

"But now we have to acknowledge that the season is an almost total failure on account of the prolonged severe drought. Bees have found no flowers and in consequence could gather but little honey. The wax has suffered equally, and arrivals are very insignificant and the quality is almost invariably poor."—Cuba Export Company, Santiago de Cuba, Jan. 23.

"I have found that 'bait sections' will produce just as good-looking comb honey, and with as nice cappings as any other, if you pass a knife over the cells and scrape down the comb about halfway to the mid-rib. This is done best in frosty or cool weather while the wax is brittle. It leaves the sections cleaner than to melt the cells down by a hot iron plate, as some have reported doing. Try it on a section one of these cold mornings."—G. A. Pauli, Otero County, Colo.

"Carniolan tested queens; price, \$2.00. Jan Strgar, Queen Raiser, Bitnje, J. Bohinska Bistrica (S. H. S.) State of Serbs, Croats, Slovenes, Carniola, Europa."—Francis Jager, Hennepin County, Minn. [Gleanings knows nothing of Jan Strgar, but prints this notice sent by Prof. Jager, as an answer to many inquiring as to where Carniolan queens can be secured. We assume no responsibility as to this information.—Editor.]

"I remember long ago in Ireland that the chief inspector, Mr. T. B. O'Brien, told me that the best beekeeper he ever saw was a blind man. He used to relate how this blind man once went out with him to look at a strong stock. The minute he had the

BEES, MEN AND THINGS

(You may find it here)

cover off, the blind man said, "They have swarmed without my knowing it." O'Brien was astonished, as the quilt had not yet been taken off the top of the

frames. The blind man explained that he knew by the loss of heat that the swarm was gone. I correspond regularly with a blinded soldier whose eyes were shot out. He has been taught carpentry and chicken farming. And he writes me that he defies any carpenter to do better work. We all know that fineness of touch is a great acquisition in beekeeping, which probably accounts for women being better than men at it. Therefore the blind man whose touch becomes tremendously developed should make a very good beekeeper."—Will H. Gray, British Columbia.

"I am looking for American foul brood next season in greater quantity than last season. I find after a hard winter it seems to show itself more. New Jersey is having quite a stir over the disappearing disease. Coley and myself attended their meeting at Trenton recently. They are a wideawake association."—E. Vanderwerken, Fairfield County, Conn.

"The census taker was here today, and judging from the way he took census of me, it would seem that beekeeping is in for a pretty raw deal at the hands of our census takers. He merely asked me my name, age, where born, where father and mother were born, whether married or single, and occupation, and that was all he wanted to know. He declined to take any notes on property, real or personal, that I might own, number of colonies of bees I have, income from my business, or anything about it. He is getting all the statistics possible about farming, poultry-raising, etc., but says he has no form on which to take statistics in regard to the bee business. So far as I know, the beemen of the country will appear on the census rolls as a lot of men without any property of any kind, not even a colony of bees, no income, and, to all intents and purposes, paupers."—H. D. Murray, Red River County, Tex.

"The Stroller notes that would-be purchasers of bees are very numerous; that many are trying to break into the game; that any old bee in any old box commands a price; that twenty dollars per in a good hive finds customers; that it is reported 70 per cent of the honey in Washington is still in the hands of producers; that the price is no higher notwithstanding the advance in sugar; that here it takes more honey to spring the bees than it does to winter them; that abundance of honey in the hive after winter means extra-strong colonies."—E. J. Ladd, King County, Wash.

A WIRE report to Gleanings, dated at Los Angeles, Feb. 21, reported rains had been general thruout California for two days and were still continuing, bringing the total rainfall to that date above the rainfall of last year but still below normal in most localities. The prospects for a sage honey crop are greatly improved by these welcome rains.

* * *

The 31st annual meeting of the Pennsylvania Beekeepers' Association, which was held at Harrisburg on Jan. 21, was one of the most interesting and profitable meetings of beekeepers ever held in that State. Prof. H. C. Klinger of Liverpool, Pa., and Charles N. Greene, Apiary Advisor for Pennsylvania, were re-elected as president and as secretary-treasurer, respectively.

* * *

The British Columbia honey crop for 1919 is officially estimated at 172 tons, which brought an average price of 29c per lb.

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The Inland Empire Beekeepers' Association recently held a meeting at Davenport, Wash., and elected Geo. W. York of Spokane, president; Mrs. J. E. Thompson of Coeur d'Alene, secretary-treasurer.

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The new officers of the Western New York Honey Producers' Association are: Wm. F. Vollmer, Akron, president; J. Roy Lincoln, 1802 Ontario Ave., Niagara Falls, secretary-treasurer.

* * *

The officers of the Kansas State Beekeepers' Association elected at the annual meeting held in January are: O. A. Keene of Topeka, president; O. F. Whitney of Topeka, secretary.

* * *

The newly-elected officers of the Illinois State Beekeepers' Association are: Dr. A. C. Baxter of Springfield, president; G. M. Withrow of Mechanicsburg, secretary; Geo. Seastream of Pawnee, treasurer. James A. Stone, who for 29 years has been the secretary of the Illinois association, was unanimously elected an honorary life member.

* * *

The program of the National Beekeepers' Association's annual meeting to be held at the Statler Hotel, Buffalo, N. Y., on March 9, 10, and 11, so far as completed, is as follows: March 9, 1 p. m.—Annual address of the President, B. F. Kindig; "Beekeeping as a Business," Colin P. Campbell; "Marketing to increase Sales," R. F. Holtermann; appointment of committees. March 10, 9:30 a. m.—"Modern Methods in Comb Honey Production," E. S. Miller; "Nation-wide Co-operation from the Manufacturers'



Viewpoint," Kenneth Hawkins; "Confidence - Co-operation-Life," C. F. Muth; report of committees. March 10, 1 p. m.—Address by C. P. Dadant; "Organization in Iowa," Prof. F. B. Padlock; "Proper Packing of Honey for Shipment," J. A. Warren; "European Foul Brood Control as Modified by the Time of the Honey Flow," Dr. E. F. Phillips; general business session and election of officers. March 11, 9:30 a. m.—"The Grading of Honey," Frank Rauffuss; "A Survey of Beekeeping in Iowa," Prof. E. W. Atkins; "Our National Problems and How to Solve Them," Prof. Geo. H. Rea.

* * *

The 31st annual meeting of the California State Beekeepers' Association was held Feb. 6th and 7th at the Auditorium in Exposition Park, Los Angeles. The officers elected were: J. E. Pleasants of Orange, president; M. H. Mendelson of Ventura, vice-president, and A. B. Shaffer of Los Angeles, secretary-treasurer. The executive committee: R. Powell, Riverside; Edward Fisher, Burbank, and Roy K. Bishop of Santa Ana.

* * *

The New York State Association of Beekeepers' Societies met in annual convention at the Joseph Slooem College of Agriculture, Syracuse University, Syracuse, N. Y., on Feb. 2 and 3. O. L. Hershiser, Kenmore, N. Y., was re-elected president; and J. H. Cunningham of the University, secretary. About 200 beekeeper members were in attendance, some 30 or 40 of whom were delegates of affiliated beekeepers' associations; and the attendance included representation from nearly every honey-producing locality in the State. A committee of five was selected to attend the convention of the National Beekeepers' Association, which convenes at the Statler Hotel, Buffalo, on March 9 for the purpose of receiving and acting on information relating to the newly-organized American Honey Producers' League. Pursuant to an overwhelming vote by the delegates to incorporate the association under the New York State incorporation law, incorporation papers were prepared, and it is expected that with the completion of the incorporation and with the powers and privileges thus secured, all New York State Beekeepers soon will be enjoying the long-sought benefits of obtaining their bee supplies at greatly reduced rates and being able to secure greatly increased profits that will come from a better and easier distribution of their honey. It was decided to hold the annual summer meeting and basket picnic on the first Tuesday of August at the home and apiary of W. L. Coggsall at Groton, N. Y.

QUESTIONS.—

(1) We are wintering some Italian bees in a Buckeye hive up here, 8,000 feet above sea level, and there is lots of activity in and around the hive on warm, sunny days; but a good many bees are dead outside the hive entrance, and the floor of the hive near the entrance, as well as the floor of the room directly in front of and below the hive entrance, is covered with a powdery substance. Has this substance any connection with the death of the bees? (2) When would it be safe to open and go thru the hive?

Wyoming.

C. M. Cosby.

Answers.—(1) At this time of the year on warm days it is natural that the bees should fly from the hives and some perish. These are old bees that would not survive the winter anyway. The powdery substance on the floor of the hive and also at the entrance need cause no worry on your part. This powder is made up mostly of particles of wax from the cappings. On warm days in the spring you will often notice bees carrying this out at the entrance. (2) During the winter the colony should not be disturbed, but in the spring as soon as it is warm enough for the bees to fly freely the hive may be opened and an examination made.

Questions.—(1) Is it advisable to combine two weak colonies? Please explain the operation in detail. (2) When there are more queens than one in a hive, should all but one be removed? Please explain the process and when to look for them. (3) Explain in detail the use of queen-catchers.

New York.

William L. Hughey.

Answers.—(1) During winter it would not be good beekeeping practice to unite colonies, for, of course, they should not be handled at all during very cold weather; but in the spring weak colonies may be easily united by placing the brood-chamber holding the combs and bees of the one colony immediately over the brood-chamber of the one with which it is to be united, having only one thickness of newspaper between the two supers. The bees will soon gnaw thru the newspaper and unite peaceably. (2) During the swarming season when colonies sometimes start a great many queen-cells, the various colonies in the yards should be examined at frequent intervals of a week or so to make certain that no young queens are hatching. For, if the colonies are neglected at this time and allowed to raise as many queens as they choose, the result will be that swarms will issue. Except at swarming time, there would be no danger of having more than one queen in one hive unless the queen became, in some way, defective and the colony should attempt to supersede or replace her with a young queen. In such a case, however, you would not wish to remove a second queen. For, in cases of supersedure, the two queens will usually live together peaceably in the new hive until the death of the old queen. (3) When a swarm issues from a hive it is

GLEANED BY ASKING

Iona Fowls

accompanied by the old queen. The bees, together with the queen, in case she has not been clipped, then cluster near, and when the cluster has become

quiet, the beekeeper may, by means of a swarm-catcher (which is simply a basket or other receptacle on the end of a pole) capture the swarm by shaking them into the swarm-catcher and then jolting them down in front of the new hive in which they are to be housed.

Question.—How is the best way to introduce queens to bees bought in pound packages?

Utah.

Dewey S. Olson.

Answer.—When buying pound packages, the queens are purchased separately. If the buyer so requests, the queens will be introduced before sending. We know of two-queen-breeders who introduce the queens by simply shaking the bees into the package and then half an hour later immerse the caged queen in lukewarm water, give the bees another shake, and run the queen into the package of bees.

Question.—How can fruit trees be sprayed effectively without killing bees?

Jas. Kirkland.

Pennsylvania.

Answer.—If the trees are sprayed while in full bloom, the delicate reproductive organs of the flowers are injured and the bees are poisoned by the spray. Sometimes much brood is killed; at other times entire colonies perish. The spraying should never be done while the trees are in bloom. We will be glad to send you free a booklet entitled "Bees and Fruit," that you can show your fruit-growing neighbors to convince them that they should never spray while their trees are in blossom and that bees are of great service to fruit orchards. We will also send to beekeepers, who write and ask for them, printed post cards headed "Don't Kill the Bees." These can be mailed out to the beekeepers' fruit-growing neighbors. These post cards explain to the fruit-grower the value of bees to fruit and when to spray so as not to poison the bees. The post card kindly requests the fruit-grower not to spray his trees while in bloom. State the number of such post cards wanted.

Question.—Can you advise me as to how you prevent your honey from candying in the glass?

New York.

H. C. Mills.

Answer.—There is no way to prevent honey from granulating. There is a great difference in honey in this respect, some granulating in less than a week. A few other kinds remain liquid for long periods, years in some cases. We advise that if the honey is heated properly at the time of bottling, it will remain liquid a much longer time. Some beekeepers when selling their honey agree to replace any that may granulate in the jars while in the hands of the retailers. The grocer is a little more apt to purchase

with this guarantee, and yet the honey sells so well that there are really very few times when the beekeeper needs to fulfill this promise.

Questions.—(1) I found out that my bees have American foul brood, but did not know it until after they were packed for winter. I have only 8 stands, and I intend to move them a distance of 40 miles in the spring. I want to transfer them by the Wm. McEvoy plan. I have over 500 extracting combs that have been exposed to foul brood. Should I burn the frames, or can I clean them? I want the safest and surest way. I have 50 new seven-wire queen-excluders; how can I clean them to make them safe to use again? (2) When would be the best time to transfer them? (3) I had thought to brush the bees out and take them to their new location about the last of May, then handle them about the same as two-pound packages from the South. Would this be all right? Joe Shaffer, Ohio.

Answers.—(1) It is always somewhat cheaper for us to burn the frames than to attempt saving them. Yet, if one cares to go to the trouble the frames may be disinfected by hot steam. The queen-excluders may be disinfected the same as hives, by burning off the surface. (2) The best time to treat them would be in the spring at fruit-bloom time. If they do not obtain honey to keep them till the main honey flow, it will be necessary to feed them. (3) In the McEvoy treatment one set of frames of foundation is given, and then after the bees have drawn this out into comb, the comb is taken away from them and another set of foundation given them. Experience has shown that this is a great waste, and that it is unnecessary. The bees may be shaken and the pound packages taken to the new location and put on to the frames of foundation without spreading the disease.

Question.—(1) In my cellar there are a couple of hives in which the bees are making so much noise and trying so hard to get out that I have nailed a little wire screen on the entrance to keep them in, but they still feel uneasy. (2) I bought two swarms of bees last summer. One had a clipped queen. Will she be all right? She has only one wing. Will she get mated that way? Tony McNutt, Wisconsin.

Answers.—(1) When colonies are put in the cellar the entrances should not be closed. If there are mice in the cellar and you fear they may enter the hives, we advise that you use a $\frac{3}{8}$ -inch mesh screen over the entrance. This will shut out the mice, but allow the bees to come out at the entrance if they desire. When bees are shut tightly in their hives so that they cannot leave, they become uneasy and raise the temperature of the hive, causing poor wintering and often dysentery and death. If the bees do not become quiet after the screen is removed, the chances are that your cellar is too warm. A temperature between 45 and 50 degrees Fahrenheit is just about right. (2) If the queen has the wings on one side clipped she is doubtless a laying queen, otherwise the beekeeper would not have clipped her wings. As you probably know, the wings do not grow out after they are clipped, so

that during a lifetime a queen needs to be clipped only once. As queens always mate while on the wing, if a beginner should make a mistake and clip a queen that had not yet mated, the queen would be ruined since she would then be unable to mate.

Question.—Can you tell me how to make royal jelly for queen-cups without the bees making it for me? Chas. P. Johannigomier, Illinois.

Answer.—There is no way that we know of for making royal jelly. Some beekeepers do not use royal jelly in grafting, but simply pick up a little food along with the young larvæ. Others make a colony queenless and allow them to start queen-cells, thus furnishing them with all the royal jelly they need for grafting.

ANSWERED BY E. R. ROOT.

Question.—Please explain the process of taking stings from bees, as I am thinking of engaging in the business. We have 10 colonies of bees with which we are raising (?) honey. Are the stings taken from live bees or are the stings of value taken from dead bees? Naturally, a novice in the business would prefer handling dead bees. Wisconsin. Mrs. James Montgomery.

Bees' stings are used in large numbers by the Homeopathic school of medicine. We have ourselves filled several orders each for 10,000 stings. The stings are dropped into a vessel containing sugar of milk. They are afterward treated by a process that makes what is known as *Apis mellifica*. We stopped furnishing stings because it caused an itching sensation on the part of the employee who removed the stings. This was due to the fact that he inhaled the fumes of the poison. After he had pulled several thousand stings he would have to rest a while. The work was done as humanely as possible by crushing the bee instantly when the sting was removed.

Question.—At Davis, Calif., I became very much interested in Mr. Root's lecture on the 13-fr. hive. I tried out 10 this season, and extracted 140 gallons of honey. The season before I had 20 colonies and got only 100 gallons. By giving the bees plenty of stores for the winter and packing them with shavings, I find that they come out strong in the spring ready for the honey flow. H. G. Brause, California.

Answer.—We have received quite a number of letters from California beekeepers saying that they have tried out 12-and 13-frame hives. Practically every one of them speaks as does the writer above. This is not mentioned because we advise our readers to adopt 13-frame hives. The point we wish to make is that strong colonies, whether in two 8-frame or two 10-frame hive-bodies, 13-frame or Jumbo 10-frame hives, are the kind that get the honey. In some localities the 13-frame Langstroth hive, or the 10-frame Jumbo hive is preferable to two 8- or 10-frame hives tiered up. No one should adopt any other style of hive than the regular one without trying a few first. In all our talks we have urged the importance of trying only a few, and that is precisely what most have done.

IF you read the whole of that seventh chapter of Mark, you will notice it was the pious Pharisees that began to pick on the followers of the Lord Jesus Christ and criticize them because they did not observe the ceremony—please notice I say *ceremony*, because it was *only* a ceremony—of washing hands before eating. They did not claim the

disciples' hands needed washing, but the ceremonial washing they insisted on was only a part of their traditions. We can not for a moment suppose the dear Savior would advise coming to the table with soiled hands. After I have been working in the garden, of course I am careful to wash my hands thoroughly before responding to the call for dinner; and in order to do this as quickly as possible, both here in Medina and down in Florida, I have a wash-basin, towel, and some soap right handy out in the shade; and I have them outdoors so that I may use as much water as I choose without being as careful as I would be in the bathroom. Now, what our Savior meant to teach was the folly of spending time, and perhaps debate, on non-essentials. These same Pharisees, probably, or at least some of them, were guilty of the awful sins and crimes enumerated in our last text; and yet they made a great fuss because the disciples neglected the washing of their hands when they were probably already clean.

Those of you who have been following the prohibition crusade have noticed again and again how the laws against intoxicants make an exception of "wine for sacramental purposes." This would seem to indicate that there are churches—I do not know what kind, and I am glad that I do not—that insist on having *intoxicating wine* at the communion table. Why, it seems to me just awful to think that in this day and age of progress any man, woman, or child should insist that the wine for the holy communion table should be *intoxicating*.



And when they (the Pharisees) saw some of his disciples eat bread with defiled, that is to say, with unwashed hands, they found fault.—MARK 7:2.

There is nothing from without a man, that entering into him can defile him; but the things which come out of him, those are they that defile the man.—MARK 7:15.

For from within, out of the heart of men, proceed evil thoughts, adulteries, fornications, murders, thefts, covetousness, wickedness, deceit, lasciviousness, an evil eye, blasphemy, pride, foolishness.—MARK 7: 21-22.

Years ago an intemperate man in our town was reformed and seemed to be thoroly converted. I think our church then used real wine. When it came to communion he asked to be excused, saying a taste of that stuff would set him crazy. The old tempter would seize the chance to get him again into his clutches. I can not remember exactly, but

I am really afraid the good deacons told him he would have to partake of the wine with the rest; and they did not seem to know of any *other kind* of wine at that time. The poor man set aside his better judgment and tasted the wine; and, sure enough, just that little taste of wine started the old craze, and he went off on a drunken spree, and that was the last of his conversion. You may say that this is exceptional and extravagant, but it is not. Satan once held *me* in his clutches, and I know what it means. Unless we get right down to the principle of "touch not, taste not, handle not," we are on the side of danger.

There is great talk just now about a union of the churches, and may God prosper the undertaking. But before that time comes I hope and pray that not a church will be found composed of people who think the wine must be intoxicating.

There has been a lot of debate as to whether the wine of ancient times was intoxicating or just unfermented grape juice. Now, I would not waste a minute in any such stupendous folly. It does not matter four cents' worth whether the wine the Savior used was intoxicating or not. If he were here on earth at the present time *he* certainly would not object to any red juice as an emblem of the precious blood he shed that you and I might be clean—yes, "whiter than snow."

Let me digress a little. On page 464 I copied what Mr. Trumbull, editor of the *Sunday School Times*, says about the defeat of injustice. Some one may ask where he got his authority for saying that we

should not worry nor even give a passing thought to what people say about us nor even when they abuse us. The authority for it is in that 15th verse. Nothing can hurt us from the outside. It is only the things that come from the inside. An illustration comes to my mind just now that will help you to realize the danger of merely *thinking* or letting your mind run along channels where there is danger. Over 40 years ago there was a merchant doing business on our streets right in the busiest part of the town. He had, perhaps, managed unwisely, and during the severest cold weather in January he had but few customers and but little to do. Right here comes in that good old adage:

Satan finds some mischief still
For idle hands to do.

The property was pretty well insured, and the prince of darkness slyly suggested to him that he could set his premises on fire and call out the fire company when the flames had reached a certain point, and thus get quite a little insurance. Perhaps I should explain that he confessed all this to me while he was in jail. He said that when the first thought occurred to him he rejected it at once; but as the days followed, and he did not find much to do, he kept thinking of how it *might* be done and yet escape detection. Again and again he rejected the thought, but somehow it got to be a kind of craze or passion with him. He could not *cease* thinking about it. Right here comes in the Savior's warning. One night when this man had closed up his place of business during a severe zero spell, he went about the premises planning where he might put the kerosene and how he would manage. Finally he poured out kerosene in several places and touched the match. When the flames began to endanger the town he raised the alarm. After a hard fight the fire was put out. If it had got beyond control, it would probably have burned up the busiest street and perhaps the whole town. But, as it happened, he miscalculated a little. He had raised the alarm somewhat too soon. There were parts of the premises where the firemen smelled and found kerosene that had not been reached by the fire. This man not only made a full confession, but on his knees on the floor of the jail he asked the Lord to forgive him. I do not know now what has become of him; but I hope the lesson was sufficient so that ever afterward, when evil thoughts intruded, he said, "Get thee behind me, Satan." And I hope, too, that ever afterward he "kept busy" doing something to bless instead of injuring his neighbors and fellow-men.

Please consider once more the text which I have repeated so often, "Let the words of my mouth, and the meditation of my heart," etc. If you keep all kinds of evil thoughts out of your heart you will not have any trouble with intemperance or worse things. Yes, there *are worse* things than intemperance. In the 21st verse our Savior says, "Out of the heart proceed evil thoughts." Now please notice carefully, when he speaks of the awful sins that humanity is guilty of, which one he mentions first. Is it murder? Not so. In his enumeration of the sins that mankind is guilty of he first mentions "adulteries." And when I think of the divorcees that are now getting to be more and more prevalent, of the illegitimate children that are born and sent loose on the world, of the young criminals that are cropping out here and there, and reflect that adultery is very likely the real starting point of these things, I begin to think the Savior was right in putting adultery and fornication first. Strong drink is beginning to be considered the starting point of most of our crimes, and perhaps it is. But I am beginning to think, as I grow older, that adultery is probably worse than strong drink; and this awful sin, perhaps more than any other, starts first in "the meditation of the heart." Of course strong drink is the great ally of adultery. Under the influence of liquor, perhaps just a little alcohol, a man's thoughts naturally run that way. In Proverbs 23:33, we read that the one who is under the influence of drink shall "see strange women, and thy heart shall utter perverse things." In the last verse of chapter 9 of the same book we read, "Her guests are in the depths of hell."

Once more let me repeat that when the time comes when all mankind, or perhaps we might say when all who profess to be followers of the Lord Jesus Christ, shall make this little text their own, that has been in my mind so much, and that I have talked about again and again and prayed over daily; or, better still, when all mankind make that prayer *their* prayer, the glad time that is expressed in the Lord's prayer will be near at hand—"Thy kingdom come, thy will be done on earth as it is in heaven," divorcees will cease, illegitimate children will be unknown, and *crime*, that just now seems to be getting worse and worse, especially in our great cities, will be almost, if not quite, unknown.

Right close by where I am writing, in our Medina jail is a boy 17 years old who is charged with having committed murder—yes, I think it was deliberate murder. His home is not in our county of Medina.

It is or was in Orrville, Wayne County, where the number and character of open saloons have been almost the worst of any in Ohio. In company with two other boys of about the same age he commenced robbing stores in the surrounding towns, but for some reason escaped arrest for quite a time. Finally, when the officers of the law caught him red-handed he deliberately shot the officer with a revolver which he carried for such an emergency. He probably was under the influence of liquor at the time. What should be done with him?

Now, once more in closing let me repeat that precious text:

Let the words of my mouth, and the meditation of my heart, be acceptable in thy sight, O Lord, my strength and my redeemer.

"PARCHED CORN" FOR HEALTH AND ALSO TO REDUCE THE "H. C. L."

Today is Jan. 9, and I am still using (finely ground) parched corn *three times a day*. I am also, three times a day, thanking God for splendid health, and strength for a lot of work thrown in. The following, from the *Rural New Yorker* of Jan. 3, is along the same line, only it doesn't touch on *parched* corn and wheat.

At this season we naturally think of new things—things which promise to change life somewhat in the future. A flock of these things are flying this way. Some will be shot down by practical experience, but others will continue to fly away with some of our present "fixed" habits. We have been trying a little electric grinder. You simply attach it to the ordinary lighting wire, pour in a quantity of whole grain, and turn on the current. The motor does the work, turning out a fine quality of entire flour or meal. By regrounding and sifting you may have fine flour and a coarser bran which makes a fine boiled "cereal." We washed corn, wheat, or rye, dried in the oven, and with this simple device prepared a flour excellent for bread or cakes at one-third the price of "patent" flour. The machine is not yet manufactured in large numbers, but we think it has a great future. We think the use of this family ground grain will increase, especially among town and city people and bakers. They will simply buy the entire grain, make their own flour, gain the habit of eating it, and save half their flour bills. We are told that in England many small farmers and gardeners are raising small patches of wheat to be used somewhat in this way. The yield of wheat on good land with hand cultivation is enormous. This is one of the changes we must look for in the future.

No "sifting" of the finely ground grain *for me*; I want the whole of the corn, as God gives it to us. Put it into very hot milk and add a little honey or Florida syrup or sugar, and who could ask for more?

NOT \$1.00 AN HOUR, BUT \$1.00 A MINUTE—
THE WAGES A CALIFORNIA BEE-
KEEPER PAYS.

The following, which I clip from the

Scientific American of Dec. 27th, I think will interest our readers from several points of view:

BEE-FARMER USES AIRPLANE.

In the stress of a seedtime or harvest emergency, farmers have had to pay unprecedented prices for labor, but none, so far as we have heard, has equalled Nelson W. Peck of the Yakima Valley, Washington. Peck keeps bees—a lot of them. Fruit blossoms are an important source of nectar out in that country, and spray-poisoned orchards a lively menace to the beekeeper. In fact, in 1918, Peck lost over 700 hives of bees from poisoning, a mighty big loss when we consider the depreciation in his investment together with the loss of potential profits. Honey prices were away up, so that every single efficient colony was a sizable asset.

To prevent a repetition of poisoning losses in 1919, Mr. Peck employed expert labor at \$1 a minute—\$60 an hour. The expert was an aviator. Is Nelson W. Peck the first farmer in the United States to employ an aviator in his farming business?

On the first of several flights with the aviator, Peck was up 75 minutes. His object was to pick out stands for his bees sufficiently removed from spray-poisoned orchards to guarantee safety, and he could think of no way of doing this like observation from an airplane. To Peck, the cost of the service, \$1 a minute, was a mere trifle, beside its value to him. He says he would have saved \$10,000 in 1918, had he taken such a flight before setting his bees. The system followed by big beekeepers like Peck is to establish small yards at scattered points in a wide territory, as in this way only is it possible to keep many hundreds of colonies. As the honeybees seldom forage above two miles from the hive, it is practical to make locations from an airplane.

If California had a law against spraying while the trees are in bloom, would not the orchards be a benefit to the bees, and the bees in like manner to the orchards? Will not some of our California friends tell us more about this matter?

COUGHS AND COLDS IN FLORIDA DURING WINTER TIME.

Dear Mr. Root:—I do not call to mind that you have ever told us in GLEANINGS whether coughs and colds are as common in Florida as they are in the North.

Just now we are having a most dangerous epidemic of this scourge.

Will you please write me your experience and observation on enclosed postal card. Kindly yours,
T. M. POLK.

Patterson, Mo., Jan. 23, 1920.

Of course, we don't have coughs and colds here as you do in the North, for our winters are about the same as, say, May and September in the North. We did have the "flu," at least some did, a year ago; but I do not know of any one around here just now who has either cough or cold. Better come down here and try it. I am glad you called attention to the matter. It is surely a fine place for old people.

Your old friend,

A. I. ROOT.

Classified Advertisements

Notices will be inserted in these classified columns for 25 cents per line. Advertisements intended for this department cannot be less than two lines, and you must say you want your advertisement in the classified column or we will not be responsible for errors. Copy should be received by 15th of preceding month to insure insertion.

HONEY AND WAX FOR SALE

Beeswax bought and sold. Strohmeier & Arpe Co., 139 Franklin St., New York.

FOR SALE.—Clover extracted honey in 5-lb. pails. L. S. Griggs, 711 Avon St., Flint, Mich.

FOR SALE.—New crop clover honey, two 60-lb. cans to the case. Sample 20c.
W. B. Crane, McComb, Ohio.

FOR SALE.—Clover and buckwheat honey in any style containers (glass or tin). Let us quote you.
The Dero Taylor Co., Newark, N. Y.

FOR SALE.—Raspberry-milkweed honey in new 60-lb. cans (2 in case).
P. W. Sowinski, Wharton, Ohio, R. D. 1.

FOR SALE.—Finest quality extracted white-clover honey and buckwheat honey in 60-lb. cans, two in a case. Chas. Sharp, Romulus, N. Y.

FOR SALE.—Four tons choice clover honey, extra well ripened, packed in new 60-lb. tins, two in a case. Wish to sell in one lot.
Lee & Wallin, Brooksville, Ky.

FOR SALE.—12,000 lbs. new crop, well-ripened Old Ky. No. 1 clover honey, in 60-lb. cans, at 22½¢ per lb. f. o. b. Brooksville. Sample 25c.
W. B. Wallin, Brooksville, Ky.

We have a very choice lot of white clover honey for sale at 25¢ per lb. in 60-lb. cans; also some very choice fall honey at same price.
M. V. Facey, Preston, Minn.

FOR SALE.—We have a small part of our crop of white clover-basswood extracted honey left, packed in new 60-lb. cans, two to the case. Write for prices.
D. R. Townsend, Northstar, Mich.

FOR SALE.—Amber mountain honey, 20c; sage honey, 25c; dark honey, 15c; in 60-lb. cans. Bees and 4-frame extractor wanted.
C. F. Alexander, Campbell, Calif.

FOR SALE.—1,400 lbs. of light-amber honey in new 60-lb. cans. Price 21¢ per lb. f. o. b. New Sharon, Iowa. Send for sample. I also have about 60 wood-and-wire queen-excluders for sale in good condition.
Fred Briggs, New Sharon, Iowa.

FOR SALE.—Extracted honey, fine quality clover, 25c; clover and buckwheat mixed about half and half, 20c. Two 60-lb. cans to case, in 5-lb. pails 3c a pound extra. Some buckwheat comb honey at \$6.50 per case of 24 sections.
H. G. Quirin, Bellevue, Ohio.

E. D. Townsend & Sons, Northstar, Michigan, offer their 1919 crop of white clover and white clover and basswood blend of extracted honey for sale. This crop (it's only a half crop this year) was stored in nice white clean extracting combs that had NEVER had a particle of brood hatched from them. We had more of those extracting combs than we could possibly use this year, and we piled them on the swarms as needed. NOT A SINGLE OUNCE OF HONEY WAS EXTRACTED UNTIL SOME TIME AFTER THE CLOSE OF THE WHITE HONEY FLOW; consequently NONE could be produced that will excel this crop of honey. Of course, it is put up in NEW 60-pound net tin cans, and they are cased up for shipment, two in a case. If you are one of those who buy "just ordi-

nary" honey, at the lowest price possible, kindly do not write us about this lot of honey; but if you can and have customers who will want the very best and are willing to pay the price, order a small shipment of this fine honey as a sample, then you will know just what our honey is and whether it is worth the little extra price we ask for it or not. We quote you this fine honey, either clear clover, or that containing about 5 per cent of basswood—just enough basswood to give it that exquisite flavor relished by so many, at only 25¢ per pound on car here at Northstar. Kindly address, with remittance.
E. D. Townsend & Sons, Northstar, Mich.

HONEY AND WAX WANTED

WANTED.—Small lots of off-grade honey for baking purposes.
C. W. Finch, 1451 Ogden Ave., Chicago, Ill.

BEESWAX WANTED.—For manufacture into SUPERIOR FOUNDATION. (Weed Process.)
Superior Honey Co., Ogden, Utah.

WANTED.—Extracted honey, all kinds and grades for export purposes. Any quantity. Please send samples and quotations.
M. Betancourt, 59 Pearl St., New York City.

WANTED.—Extracted and comb honey. Carload or less quantities. Send particulars by mail and samples of extracted.
Hoffman & Hauck, Inc., Woodhaven, N. Y.

WANTED.—White clover or light extracted honey. Send sample, state how honey is put up and lowest cash price delivered at Monroe. Also buy beeswax.
E. B. Rosa, Monroe, Wisc.

BEESWAX WANTED.—During February I will pay 42¢ per lb. cash for average yellow beeswax, delivered here. State quantity and quality and await reply before shipping.
E. S. Robinson, Mayville, N. Y.

BEESWAX WANTED.—We are paying higher prices than usual for beeswax. Drop us a line and get our prices, either delivered at our station or your station as you choose. State how much you have and quality. Dadant & Sons, Hamilton, Illinois.

WANTED.—Beeswax. We will pay for average quality beeswax delivered at Medina, 40c cash, 42c trade. We will pay 1 and 2c extra for choice yellow. Be sure your shipment bears your name and address as shipper so we can identify it on arrival.
The A. I. Root Co., Medina, Ohio.

WE BUY HONEY AND BEESWAX.—Give us your best price delivered New York. On comb honey state quantity, quality, size, weight per section, and sections to a case. Extracted honey, quantity, how packed, and send samples. Charles Israel Bros. Co., 486 Canal St., New York, N. Y.

FOR SALE

Root's Goods at Root's Prices.
A. W. Yates, 3 Chapman St., Hartford, Conn.

I manufacture Modern Cypress beehives. Write for prices.
J. Tom White, Dublin, Ga.

HONEY LABELS.—New designs. Catalog free.
Eastern Label Co., Clintonville, Conn.

FOR SALE.—A full line of Root's goods at Root's prices.
A. L. Healy, Mayaguez, Porto Rico.

FOR SALE.—500 lbs. good average yellow beeswax.
L. E. Evans, Onsted, Mich.

FOR SALE.—40 Danzenbaker hive bodies.
Geo. W. Cook, Latty, Ohio.

A full line of Root's goods at catalog prices. Catalog on request. Will buy your beeswax, 40c cash, 42c trade.
A. M. Moore, Zanesville, Ohio.

FOR SALE.—Four-frame reversible extractor for hand power. Price, \$30.00.
L. D. Gale & Son, Mayville, N. Y.

FOR SALE.—SUPERIOR FOUNDATION, "Best by Test." Let us prove it. Order now.
Superior Honey Co., Ogden, Utah.

FOR SALE.—Push-in-comb queen-introducing cage, The Safe Way, 50c.
O. S. Rexford, Winsted, Conn.

FOR SALE. 100 lbs. Dadant's medium brood foundation, all new and standard size, \$75.00 takes it.
Wm. G. Blake, Port Huron, Mich.

FOR SALE.—A 10-inch foundation mill in perfect condition.
F. R. Manning, R. D. No. 2, Meaford, Ont., Can.

STILES BEE SUPPLY COMPANY, Stillwater, Okla. We carry a full line of Root's Bee Supplies. Beeswax wanted. Free catalog.

FOR SALE.—Used 5-gal. square cans, two in a case. Good bright cans, first-class cases, 50c per case f. o. b. my station.
Floyd Markham, Ypsilanti, Mich.

FOR SALE.—One Cowan two-frame reversible extractor, for Langstroth frame. Good as new. First check of \$25.00 takes it.
Meyer Bros., R. D. No. 1, Preston, Iowa.

FOR SALE.—Ten 8-frame hives, 6 comb and 5 extracting supers, all painted; 250 new sections; 25 separators. For prices and description, address
Lawrence Ricklefs, Troy, Kans.

PORTER BEE ESCAPES save honey, time, and money. Great labor-savers. For sale by all dealers in bee supplies.
R. & E. C. Porter, Lewistown, Ills.

FOR SALE.—Second-hand honey tins, two per case, in exceptionally fine condition at 50c per case. Buy them now for next season's honey crop.
Hoffman & Hauck, Inc., Woodhaven, N. Y.

FOR SALE.—Comb foundation at prices lower than you had thought possible. Wax worked for cash or on shares. Satisfaction guaranteed.
E. S. Robinson, Mayville, N. Y.

FOR SALE.—Good second-hand empty 60-lb. honey cans, two cans to the case, at 60c per case f. o. b. Cincinnati. Terms, cash with order. C. H. W. Weber & Co., 2146 Central Ave., Cincinnati, O.

FLORIDA BEEKEEPERS.—You save money by placing your order for Root's Bee Supplies with us. We carry the complete line. Will buy your beeswax. Write for catalog.
Crenshaw Bros. Seed Co., Tampa, Fla.

FOR SALE.—60 ten-frame 4 x 5 x 1 1/2 plain section supers with sections, section-holders, and fences, about 30 painted. Been used one season. No foul brood. Best offer takes the lot.
F. D. Stephens, Box No. 383, West Branch, Mich.

FOR SALE.—1,000 Standard beehives in flat, 8- and 10-frame sizes; supers with sections; full depth and shallow extracting frames. Entire lot new and strictly first class. We will sell in large or small quantities at low prices.
The Stover Apiaries, Helena, Ga.

CANADIAN BEE SUPPLY & HONEY CO., Ltd.—73 Jarvis St., Toronto Ont. (Note new address.) We have made-in-Canada goods; also can supply Root's goods on order. Extractors and engines; GLEANINGS and all kinds of bee literature. Get the best. Catalog free.

FOR SALE.—150 section shipping cases nailed up with glass front holding 20 4 x 5 plain sections, 15c each. New nucleus cages nailed ready for use; 20 3-fr., 20c each; 57 2-fr. 15c each; 28 3-lb. cages, 30c each; 148 2-lb. cages 20c each; 150 1-lb. cages, 15c each.
The Hyde Bee Co., Floresville, Texas.

FOR SALE.—Good second-hand double-deck comb-honey shipping cases for 4 1/4 x 4 1/4 x 1 1/2 sections, 25c per case, f. o. b. Cincinnati. Terms cash with order. C. H. W. Weber & Co., 2146 Central Ave., Cincinnati, Ohio.

"Stanley's" queen-rearing nursery twin-mating boxes, cell cups and protectors. Cheapest and most adaptable. Write for information and prices. We can take a few more pupils in our queen-rearing course. A. Stanley & E. C. Bird, 2008 Pearl St., Boulder, Colo.

FOR SALE.—Root's Extractors and Smokers, Dadant's Foundation, and a full line of Lewis' Bee-ware. Our new price list will interest you. We pay 38c in cash and 40c in trade for clean yellow beeswax delivered in Denver. The Colorado Honey Producers' Association, 1424 Market St., Denver, Colo.

FOR SALE.—200 new 10-frame cross style reversible bottom-boards at 50c each; 200 new 10-frame flat reversible covers made of best select white pine at 60c each; 100 new Alexander feeders for 8- or 10-frame hives at 20c each; 150 Board-man feeders without cap or jar at 12c each. All above goods are factory-made and have never been used. Write M. E. Eggers, Eau Claire, Wisc.

FOR SALE.—4,000 sections, 4 1/4 x 4 1/4 x 1 1/2, A grade, \$8.00 per M; 25 reversible cypress bottom-boards, eight-frame, \$12.00; 30 metal covers with metal-bound inner cover, eight-frame, \$4.25 per five; 1 Root wax press, \$15.00; 15 plain section supers, 4 1/4 x 1 1/2, with holders, \$4.35 per five. Prices are f. o. b. here, cash with order.
Mason Bee Supply Co., Mechanic Falls, Maine.

FOR SALE.—75 new supers, nailed and complete without sections, equipped for 4 1/4 x 4 1/4 2-beeway sections for the standard 8-frame hives at \$1.00 each in lots of 10 or more, crated and delivered at freight office at Glasgow, Ky.; also 12 new one-story 8-frame hives with Hoffman frames, with two coats of white paint on them at \$4.00 each for the 12.
Joel O. Gorman, Glasgow, R. D. No. 4, Ky.

FOR SALE.—New and second-hand equipment. 400 comb-honey supers, 4 1/4 x 4 1/4 x 1 1/2, 10-frame; 2-frame extractor; 100 shallow extracting supers; 10-frame Bartlett Miller capping melter; 5 Dadant hives with one extracting super; Root capping melter; 100 8-frame hives, complete; one steam knife with generator; 100 8-frame hives, covers, excelsior; 150 fences 4 1/2 sections; 100 8-frame hives, bottoms; 2 Standard smokers; 3 Junior smokers; 400 Hoffman frames, new; 500 metal-spaced frames, new; 100 pounds Superior medium brood foundation; 67 pounds Dadant's medium brood foundation, 4 1/2 x 1 1/2; 16 10-frame hive bodies, new. All good, used but one season, and some never unpacked. Write for prices on what you want.
Sunnyside Apiaries, Fromberg, Mont.

REAL ESTATE

FOR SALE.—Twenty-acre farm, 200 colonies of bees, one acre ginseng and golden seal. Good soil, buildings, bee equipment and location.
L. Francisco, Dancy, Wisc.

FOR SALE.—25 acres 2 miles from Waverly, Va., in the peanut belt, good for poultry; 3-room house, few fruit trees, 45 grape vines, \$1,500.00.
C. B. Peterson, 6959 Union Ave., Chicago, Ills.

Small fruit ranch, eight-room brick house, well, cellar, \$3,500.00. 160 colonies bees and equipment, \$1,500. Both, \$4,750. Location: Adjoins High School, Alfalfa bee range.
E. T. Israel, Kirtland, N. M.

WANTS AND EXCHANGE

WANTED.—Used 8- and 10-frame standard hives and supers. W. O. Hershey, Landessville, Pa.

WANTED.—Reliable second-hand two-frame honey-extractor. H. L. Sherwood, Cornwall, N. Y.

WANTED.—Two-frame Cowan extractor in good condition. Harold R. Curtis, R. F. D. No. 4, Bridgeport, Conn.

WANTED.—200 or less colonies of bees (any style hive) for spring delivery.
A. W. Smith, Birmingham, Mich.

WANTED.—Old combs and cappings for rendering on shares. Our steam equipment secures all the wax.
Superior Honey Co., Ogden, Utah.

WANTED.—Used six- or eight-frame power extractor, also pump. Describe fully and give price.
C. E. Swenson, 1522 12th Ave., Rockford, Ills.

WANTED.—To buy or exchange an 18" or 20" planer, band saw and jointer, and a foundation mill.
Wm. S. Ammon, 15 So. Front St., Reading, Pa.

WANTED.—To buy bee hives in or around Chicago, if anybody has them for sale. Write
John Stettka, 1001 W. 16th St., Chicago, Ills.

WANTED.—To exchange choice of two incubators or Candee Colony brooder (coal burning) for good extractor, or other bee supplies of equal value.
H. J. Kling, Fultonville, N. Y.

WANTED.—By a man (with family of three, one boy 14 years) to run bees on shares, would work for wages. 40 years old, good habits, 10 years of experience.
Geo. K. Taft, Halfway, Mo.

WANTED.—To buy bees for April delivery, free from disease, in southeastern Minnesota or western Wisconsin. State how many colonies, kind of hives, and price.
P. B. Ramer, Harmony, Minn.

WANTED.—Shipments of old comb and cappings for rendering. We pay the highest cash and trade prices, charging but 5c a pound for wax rendered. The Fred W. Muth Co. Pearl & Walnut St., Cincinnati, O.

WANTED.—To buy small apiary of 50 colonies more or less, in good locality, guaranteed free from disease. Ontario, west of Toronto, preferred. A. Millard, c/o Chas. Annis, Pickering, R. D. No. 2, Ont., Can.

WANTED.—To buy 50 ten-frame dovetailed hives and 100 eight-frame with queen-excluders, wire combs or full sheets foundation in column. Must be cheap.

Grover C. Abbey, Columbia X Roads, No. 2, Pa.

WANTED, BEES.—Commercial apiaries completely equipped for extracted-honey production, at reasonable terms, in white-honey region. Preferably 300 colonies or more.

G. H. Cale, 423 Dorset Ave., Chevy Chase, D. C.

OLD COMBS WANTED.—Our steam wax-presses will get every ounce of beeswax out of old combs, cappings or slumgum. Send for our terms and our new 1920 catalog. We will buy your share of the wax for cash or will work it into foundation for you.
Dadant & Sons, Hamilton, Illinois.

BEES AND QUEENS

Finest Italian queens. Send for booklet and price list.
Jay Smith, R. D. No. 3, Vincennes, Ind.

Hardy Italian queens. No bees.
W. G. Lauver, Middletown, Pa.

FOR SALE.—One to fifty colonies in 8-frame hives, good condition. W. M. Robb, Neal, Kans.

FOR SALE.—Fifty full colonies about May first.
J. Ford Sempers, Aikin, Md.

When it's GOLDEN it's Phelps'. Try one and be convinced. Virgins, \$1.00; mated, \$2.00.
C. W. Phelps & Son, Binghamton, N. Y.

FOR SALE.—Pure-bred Italian bees in season, 20 years' experience. T. C. Asher, Brookneal, Va.

QUEENS ON APPROVAL.—Bees by package or colony.
A. M. Applegate, Reynoldsville, Pa.

QUEENS ON APPROVAL.—Bees by package or colony.
Birdie M. Hartle, Reynoldsville, Pa.

Golden Italian queens, untested, \$1.25 each; dozen, \$12.00. E. A. Simmons, Greenville, Ala.

FOR SALE.—1920 Golden Italian queens, price list free. Write E. E. Lawrence, Doniphan, Mo.

THAGARD'S Italian queens, circular free, see larger ad elsewhere. V. K. Thagard, Greenville, Ala.

PHELPS' GOLDEN QUEENS will please you. Mated, \$2.00. Try one and you will be convinced.
C. W. Phelps & Son, Binghamton, N. Y.

FOR SALE.—2-lb. packages Italian bees with queens and 2-frame nuclei with queens. Can guarantee shipment April 20.
O. J. Spahn, Pleasantville, N. Y.

FOR SALE.—Golden and three-banded queens untested, April, May, and June delivery, \$1.25 each; \$12.50 per doz. Satisfaction.
R. O. Cox, Greenville, R. D. No. 4., Ala.

We will ship 2-lb. packages and full colonies only this season. Three-banded Italian queens any quantity. Send for prices. J. A. Jones & Son, R. D. No. 1, Box No. 11-A Montgomery, Ala.

Golden queens ready April 15th. One queen, \$1.50; 6, \$7.50; 12, \$14.00; 100, \$100.00. Virgins, 75c each.
W. W. Talley, Greenville, R. D. No. 4, Ala.

BEES BY THE POUND.—Also QUEENS. Booking orders now. FREE circulars give details. See larger ad elsewhere. Nueces County Apiaries, Calallen, Texas, E. B. Ault, Prop.

Bees by the pound a specialty; 2000 lbs. for May delivery, 1920; 200 Italian queens for sale with above bees. Write for prices.
A. O. Jones & H. Stevenson, Akers, La.

GOLDENS THAT ARE TRUE TO NAME. 1 select untested queen, \$1.50; 6, \$7.50; 12, \$13.50; 50 \$55.00; 100, \$100.00.
Garden City Apiaries, San Jose, Calif.

FOR SALE.—Ten colonies of bees in ten-frame Buckeye double-walled hives; also 20 new shallow extracting supers with frames and full sheets of foundation.
Pinehurst Farm, Oberlin, Ohio.

A. I. Root strain of resisting and honey-gathering leather-colored Italian queens that a trial will convince. Untested, \$1.50 each; 25 or more, \$1.40; tested, \$2.50 each; 25 or more, \$2.25; select tested, \$3.00.
A. J. Pinard, Morgan Hill, Calif.

PHELPS' GOLDEN ITALIAN QUEENS combine the qualities you want. They are GREAT HONEY-GATHERERS, BEAUTIFUL and GENTLE. Virgins, \$1.00; mated, \$2.00.
C. W. Phelps & Son, Binghamton, N. Y.

Golden Italian queens that produce golden bees; the highest kind, gentle, and as good honey-gatherers as can be found; May to August, untested, each, \$2.00; six, \$8.00; doz. \$15.00; tested, \$4.00; breeders, \$5.00 to \$20.00. J. B. Brockwell, Barnetts, Va.

BUSINESS-FIRST QUEENS.—Untested, \$1.00 each; \$11.00 per doz.; select untested, \$1.50 each; \$12.00 per doz.; tested, \$2.00 each; select tested, \$2.50 each; breeding queens, \$5.00 and \$10.00 each. Safe arrival guaranteed in the United States.
M. F. Perry, Bradentown, Fla.

FOR SALE.—Italian queens three-banded and Golden. High grade, carefully bred from best select stock. Price each, \$1.25; 6, \$6.75; 12, \$13.25; extra select, \$2.00. Orders booked now. Satisfaction guaranteed.
G. H. Merrill, Pickens, S. C., (Formerly Liberty.)

FOR SALE.—1920 prices for "She suits me" queens. Untested Italian queens, from May 15 to June 15 \$1.50 each. After June 15, \$1.30 each; \$12.50 for 10; \$1.10 each when 25 or more are ordered. Allen Latham, Norwichtown, Conn.

FOR SALE.—Bees, good hybrid stock from out-yards. Queens, three-band Italians carefully bred at home yard. No disease. Bees with untested queens: 1 lb., \$3.60; 2 lbs., \$5.50; 3 lbs., \$7.40. Write for quantity rates.

A. R. Graham, Milano, Texas.

FOR SALE.—Mr. Beeman, head your colonies of bees with the best Italian stock raised in the South. One queen, \$1.25; 12 queens, \$14.00. One pound of bees with queen, postpaid, \$6.00. Safe arrival and satisfaction guaranteed.

M. Bates, Greenville, R. D. No. 4, Ala.

We have enlarged our queen yard considerably. We can take care of orders better than ever, large or small. April 15 to June 1, untested queens, \$1.25; tested, \$2.50; untested, \$115.00 per 100. After June 1, \$1.00 each or \$90.00 per 100. J. A. Jones & Son, Montgomery, R. D. No. 1, Box 11a, Ala.

THE BEES THAT PLEASE. Three-banded leather-colored Italians, hustlers, none better, 2-lb. packages only. Untested queens, \$1.25; 2-lb. packages, \$4.75. Ready to ship about April 15. 25 per cent in advance, balance to be paid before bees are shipped. Write for circular.

J. M. Cutts, R. F. D. No. 1, Montgomery, Ala.

FOR SALE.—Italian queens from some of the best stock in the U. S., mailed as soon as hatched. Safe arrival guaranteed to any part of the U. S. and Canada. All queens mailed in improved safety introducing cages. Order early. Send for circular. Prices. April to October, 1, 75c; 10, \$6.00; 50, \$27.50. James McKee, Riverside, Calif.

FOR SALE.—Quirin's hardy northern-bred Italians will please you. All our yards are wintered on summer stands; more than 25 years a commercial queen-breeder. Tested and breeding queens ready almost any time weather permits mailing. Untested ready about June 1. Orders booked now. Testimonials and price for asking.

H. G. Quirin, Bellevue, Ohio.

1920 prices on nuclei and queens. Miller strain. Queens, untested, \$1.50 each; \$15.00 per doz.; tested \$2.00 each, \$22.00 per doz. One-frame nucleus, \$3.00; two-frame, \$5.00; three-frame, \$6.50, without queens, f. o. b. Macon, Miss. We have never had any bee or brood disease here. Will have no queens except for nuclei until June 1. Safe arrival and satisfaction guaranteed.

Geo. A. Hummer & Sons, Prairie Point, Miss.

ITALIAN QUEENS.—The Old Reliable three-banded Italians, the best all-around bee to be had. Queens ready to mail April 1, 1920. Will book orders now. Will guarantee safe arrival in United States and Canada. Prices for April and May; Untested, \$1.50; 6, \$3.00; 12, \$15.00. Tested, \$2.25; 6, \$12.00; 12, \$22.00. Select tested, \$3.00 each. Descriptive circular and price list free. John G. Miller, 723 C St., Corpus Christi, Texas.

FOR SALE.—Highest Grade Three-banded Italian queens, ready June 1. Queen and drone mothers are selected from stock of proven worth in hardiness, gentleness, honey production and disease-resisting qualities. Untested, each, \$1.25; 6, \$6.50; 12, \$12.00; 50, \$47.50; 100, \$90. Your correspondence will receive prompt attention and I guarantee satisfaction.

A. E. Crandall, Berlin, Conn.

FOR SALE.—640 colonies of bees with 2000 supers of drawn comb; 200 empty supers; 200 comb-honey supers with sections; queen-excluders for every colony; 300 escape-boards with escapes; 1 8-frame power extractor; 2 H. P. gas engine; 1 4-frame hand extractor; 3 2-frame hand extractors; 10 1,000-lb. honey tanks. This is one of the best equipments east of the Mississippi River. All in A-1 condition. Price \$8,000.

Virgil Weaver, Falmouth Ky.

ITALIAN QUEENS OF WINDMERE will be ready in May. Untested, \$1.25 each; six for \$7.00. Tested, \$2.00 each. Select tested, \$2.50 each. Now booking orders. Prof. W. A. Matheny, Ohio University, Athens, Ohio.

MOTT'S NORTHERN BRED ITALIAN QUEENS.—I have breeding mothers placed in the South for April and early May queens. Plans "How to Introduce Queens and Increase" 25c. If you want beauty with the best of summer and winter laying birds, try a setting of my Golden Campines. E. E. Mott, Glenwood, Mich.

AUTOMOBILE REPAIRS

AUTOMOBILE owners should subscribe for the **AUTOMOBILE DEALER AND REPAIRER**; 150-page illustrated monthly devoted exclusively to the care and repair of the car. The only magazine in the world devoted to the practical side of motoring. The "Trouble Department" contains five pages of numbered questions each month from car owners and repairmen which are answered by experts on gasoline-engine repairs. \$1.50 per year, 15 cents per copy. Postals not answered. Charles D. Sherman, 107 Highland Court, Hartford, Conn.

MISCELLANEOUS

Write for shipping tags and our prices for rendering your old combs, cappings, etc. We guarantee a first-class job. The Deroy Taylor Co., Newark, N. Y.

STRAWBERRY PLANTS.—Imp. Senator Dunlap, the greatest of all strawberries, \$1.00 per 100, by mail postpaid; \$6.00 per 1,000 by express. McAdams Seed Co., Columbus Grove, Ohio.

MAPLE SYRUP.—I am now booking orders for pure maple syrup to be delivered in April. A good bee-food. Write for prices.

G. E. Williams, Somerset R. D. No. 4, Pa.

HELP WANTED

WANTED.—Three queen-breeders and three practical beemen. Write Northropic Honey Co., Guatemala, C. A.

WANTED.—A competent beekeeper to work bees in southern New Mexico. Must be thoro and fast worker. Mesilla Valley Honey Co., Canutillo, Tex.

WANTED.—Man, season of 1920, to work with bees. State age, experience, and wages. Give reference. Permanent employment to right man. The Rocky Mountain Bee Co., Box No. 1369, Billings, Mont.

WANTED.—An experienced queen-breeder and also helper in our package department. Would like to have helper experienced in handling a Ford car. State experience and salary expected in first letter. M. C. Berry & Co., Hayneville, Ala.

WANTED.—One experienced man, and students or helpers in our large bee business; good chance to learn. Modern equipment and outfit, including auto truck; located near summer resorts. Write, giving age, height, weight, experience, reference, and wages wanted. W. A. Latshaw Co., Clarion, Mich.

WANTED.—May first, man with some experience or student at less salary, who wants to learn the bee business. Home yard in village, out-yard. 300 colonies. Up-to-date outfit. Give all details and wages expected in application.

D. L. Woodward, Clarksville, N. Y.

WANTED.—Two young men as students for coming season. Have twelve apiaries, giving extensive experience. Must be of clean habits. Give age, height, weight, condition of health, and if brought up in town or country. For terms, apply R. F. Holtermann, Brantford, Ont., Can.

WANTED.—One experienced beeman and one helper. Must be young men, able-bodied, and with good character. Prefer one man that can handle auto truck. State salary and give references when answering. Ernest W. Fox, Fruitdale, So. Dak.

WANTED.—One experienced man and students, as helpers with our 1,000 colonies. Best opportunity to learn the business from A to Z, in the actual production of carloads of honey. Theory also. Write immediately, giving age, height, weight, habits, former employment, experience, references, wages, photo, all in first letter. E. F. Atwater (former Special Field Agent in Beekeeping, U. S. Dept. Agr. for Calif., Ariz., and New Mexico), Meridian, Idaho.

SITUATIONS WANTED

WANTED, POSITION.—By young man with seven years' experience. Can also help with farm work. Frank Lee, Bristow, Va.

WANTED.—Student having attended winter course in Poultry Husbandry and also special short course in beekeeping held at Cornell University last year is anxious to secure employment on farm where poultry and beekeeping are combined. Preferably in N. Y. State.

H. J., care of Gleanings, Medina.



Established 1885

Write us for catalog.

BEEKEEPERS' SUPPLIES

The Kind You Want and The Kind That Bees Need.

We have a good assortment in stock of bee supplies that are mostly needed in every apiary. The A. I. Root Co's brand. Let us hear from you; information given to all inquiries. Beeswax wanted for supplies or cash.

John Nebel & Son Supply Co.
High Hill, Montgomery Co., Mo.

Complete Line of Beekeepers' Supplies

Catalog on Request

F. Coombs & Sons, Brattleboro, Vt.

BETTER SEEDS

Pheasant Eye Beans. New bush stringless—35 day Beans, Hot Squash Peppers. Carrots sweet enough for Pies. **New Narrow Grain Sugar Corn.** Also Red Skinned corn, shock it in 70 days. Write for complete Seed Catalog No. 36.

J. A. & B. LINCOLN, Seed Growers
39 South La Salle Street Chicago, Illinois

450,000 TREES

200 varieties. Also Grapes, Small Fruits, etc. Best rooted stock. Genuine, cheap. 2 sample grapes mailed for 25c. Catalog free. **LEWIS ROESCH, Box 1, Fredonia, N.Y.**

SWEET CLOVER 6⁴⁰ BU.

Greatest Money Making Crop. Big Money for the grower. Builds up land rapidly and produces heavy money making crops while doing it. Excellent pasture and hay. Easy to start. Grows in all soils. White Blossom unhulled. Our scarified, highly germinating tested Seed is the best. Write today for big Seed Guide and FREE Samples. **American Mutual Seed Co. Dept 951 Chicago, Ill.**

CONDON'S GIANT EVERBEARING TOMATO

"QUEEN OF THE MARKET." Big Money-Maker. Large, solid fruit; excellent canner. To introduce to you our Northern Grown "Sure Crop" Live Seeds, we will mail you 125 seeds of Condon's Giant Everbearing Tomato and our Mammoth 1920 Garden and Farm Guide. Tells how, when and what to plant for pleasure and profit. Send postal today. **CONDON BROS., Seedsmen**
Rock River Valley and Firm
ROCKFORD, ILLINOIS
Box 90



BEAUTIFUL IRIS

Splendid Collection of Best Varieties. Gorgeous Colors. All postpaid at Price Named.

	Each	Doz.
MME. CHEREAU, white, blue fringed	- 25c	\$2.50
LENOLDAS, dark blue	- 25c	2.50
SANS SOUËL, yellow, petals white	- 20c	2.00
GRACCUS, yellow, petals light wine	- 20c	2.00
OSSIAN, canary yellow, petals light purple	- 20c	2.00
SIBERIAN, blue	- 25c	2.50
FLORENTINE, purple	- 20c	2.00
CELESTE, sky blue	- 25c	2.50
FLAVESCENS, lemon yellow	- 20c	2.00
GOLD COIN, yellow, petals purple	- 20c	2.00

Collection one plant each variety postpaid \$2.00.

W. N. Scarff & Sons

New Carlisle, Ohio

GOOD SEEDS



GOOD AS CAN BE GROWN
Prices Below All Others

I will give a lot of new sorts free with every order I fill. Buy and test. Return if not O. K.—money refunded.

Big Catalog FREE

Over 700 illustrations of vegetables and flowers. Send yours and your neighbors' addresses. **R. H. SHUMWAY, Rockford, Ill.**

"Best" Hand Lantern



A powerful portable lamp, giving a 300 candle power pure white light. Just what the farmer, dairyman, stockman, etc. needs. Safe—Reliable Economical—Absolutely Rain, Storm and Bug proof. Burns either gasoline or kerosene. Light in weight. Agents wanted. Big Profits. Write for Catalog. **THE BEST LIGHT CO.**

306 E. 5th St., Canton, O.

Write for Book
Today



FARM WAGONS

High or low wheels—steel or wood—wide or narrow tires. Steel or wood wheels to fit any running gear. Wagon parts of all kinds. Write today for free catalog illustrated in colors. **ELECTRIC WHEEL CO., 23 Elm Street, Quincy, Ill.**



FOR SALE--THREE-BAND ITALIAN QUEENS

From best honey-gathering strain obtainable. (No disease.) Untested queens, \$1.25 each; 6, \$6.50; 12, \$12. Select untested, \$1.50 each; 6, \$9; 12, \$18. Tested, \$2.50 each. Safe arrival and satisfaction guaranteed. Your orders filled promptly.

W. T. PERDUE & SONS, Rt. 1, Fort Deposit, Ala.



World's Best Roofing

at Factory Prices

"Reo" Cluster Metal Shingles, V-Crimp, Corrugated, Standing Seam, Painted or Galvanized Roofings, Sidings, Wallboard, Paints, etc., direct to you at Rock-Bottom Factory Prices. Positively greatest offer ever made.

Edwards "Reo" Metal Shingles

cost less; outlast three ordinary roofs. No painting or repairs. Guaranteed rot, fire, rust, lightning proof.

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Get our wonderfully low prices and free samples. We sell direct to you and save you all in-between dealer's profits. Ask for Book No. 383



LOW PRICED GARAGES

Lowest prices on Ready-Made Fire-Proof Steel Garages. Set up any place. Send postal for Garage Book showing styles.

THE EDWARDS MFG. CO.,
333 383 Pike St., Cincinnati, O.

FREE
Samples &
Roofing Book

There is Big Money in Strawberries



and other small fruits these days. Strawberries sold as high as 50c a qt., \$16. a bushel at wholesale. Are you receiving these high prices as a grower or paying them as a consumer? It makes a vast difference to your pocket book.

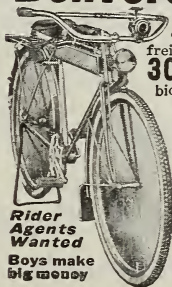
You can grow nothing that gives handsomer returns. I know of farmers who received \$1300 from 1-2 acre last year. If you live in a town a part of your lawn or back yard will make a fine strawberry bed. Our Everbearing plants set in April or May will bear in August and continue until November and give two crops the following season. Get our book, "Farmer on the Strawberry," price 50c postpaid, and you will have all the experts know.

We sell Strawberries, Raspberries, Blackberries, Gooseberries, Currants, Fruit Trees, Roses, Shrubs, etc.

Beautifully illustrated Catalog free.

L. J. FARMER, Box 8, Pulaski, N. Y.

Delivered TO YOU FREE



Your choice of 44 styles, colors and sizes in the famous line of "RANGER" bicycles. We pay the freight from Chicago to your town.

30 Days Free Trial on the bicycle you select, actual riding test.

EASY PAYMENTS if desired, at a small advance over our Special Factory-to-Rider cash prices. Do not buy until you get our great new trial offer and low prices and terms.

TIRES LAMPS, HORNS, pedals, single wheels and repair parts for all makes of bicycles at half usual prices.

SEND NO MONEY but write today for the big new Catalog. **MEAD CYCLE COMPANY** Dept. F153 Chicago

VICK'S GARDEN & FLORAL GUIDE for 1920

IT'S FREE WRITE TODAY

Free, a worth while book for vegetable growers and lovers of flowers. For 71 years the leading authority on Vegetable, Farm and Flower Seeds, Plants, Bulbs and Fruits. Never before has the pressure of high prices so emphasized the value of gardening. Whatever else you do today write for Vick's Garden and Floral Guide. Remember it is FREE. A postcard is sufficient. Do it now before you forget.

Vick's Quality Seeds Grow the Best Crops the Earth Produces

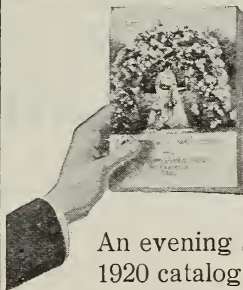
Many hundreds of gardeners have testified to this. Get the Guide and see actual pictures of 5 acres Lettuce that sold for \$7,500, five acres celery for \$5,000, eleven thousand bushels Onions worth \$2.00 per bushel.

With prices for market vegetables rising our seeds in proportion are lower than ever. Send for our catalogue today.

JAMES VICK'S SONS

33 Stone St., Rochester, N. Y. "The Flower City"

Your copy is ready!



An evening spent with our 1920 catalog opens the way to a charming garden. Nursery stock and plants developed on our 1200 acre grounds at Painesville—seeds that will produce delicious vegetables and perfect flowers—are backed by our 66 years of good service. Write—tonight.

The Storrs and Harrison Co.

Nurserymen and Seedsmen

Box 15-C, Painesville, Ohio



To California Beekeepers:

We want to get one important consideration before you in a nutshell. It is this; when you buy Root beekeeping supplies, you get

THE BEST MADE

Back of our goods are 50 years of experience and tests. Bee-supply manufacturers may come and go, but we keep on, always keeping in mind quality, Quality, QUALITY. The good new things in bee supplies, we take on and make. The good old things we hold fast to. We would rather have the reputation of absolute dependability in our goods and our dealings with you than anything else. So back of every purchase you may make of us is our guarantee---as well as 50 years of fair dealing.

We respectfully solicit your business on the quality of our goods and on our business record.

The A. I. Root Co. of California

1824 East 15th St., Los Angeles

52-54 Main St., San Francisco

MAKE SURE

of having your Bee Supplies in ample time for the coming Season by **ordering them now**. And make sure that each dollar you spend, buys THE UTMOST in Good Quality and Right Construction, by ordering from DOLL—twenty years in the business in Minneapolis.

I am now splendidly prepared to make prompt shipments of White Pine Standard Dovetailed Hives—of Smokers, Extractors, Foundation, and other Supplies. Also ready to fill your order for 3-lb., 5-lb., and 10-lb. Friction-top Cans—for 5-gallon Square Cans—and for screw-top Honey Bottles of **white flint-glass**, ½-lb., 1-lb., 2-lb., and 3-lb. sizes. All clean, new stock of the most desirable sort.

Have on hand a number of second-hand Cans—used only for Honey, and in good condition. Am offering them at a sacrifice for quick disposal. And don't forget about Comb Honey Shipping Cases and Crates—I've got the kind you want—at prices that will interest you. If you order in quantity—and will accept shipment from factory—I can **SAVE YOU CONSIDERABLE MONEY** on your season's supplies.

*Mail me a list of your needs for the season—
and I will send you Price Quotations promptly.*

P. J. DOLL BEE SUPPLY CO.

Dealer in Bees, Honey,
and Supplies

NICOLLET ISLAND

MINNEAPOLIS, MINN.

Our Food Page—Continued from page 153.

the milk a little at a time, stirring until blended. Serve at once. The cocoa may be omitted and any preferred flavor substituted. The honey flavor alone is fine.

HONEY PEACH ICE CREAM.

1 qt. can peaches $\frac{3}{4}$ cup honey
1 cup cream

Force the peaches thru a sieve or potato ricer, sweeten with the honey, and fold in the cream, which has been whipped until stiff. More honey may be preferred if the canned peaches are rather sour. Pack and freeze as usual.

HONEY BAKED APPLES.

6 tablespoons honey $\frac{1}{4}$ lb. red cinnamon drops
6 apples
1 tablespoon butter

Core the apples, leaving a little at the stem end, and arrange in baking dish. Put several cinnamon drops and a little honey in each apple, dot with butter, put the rest of the honey, cinnamon drops, and enough water to prevent the apples from burning in the dish, and bake until the apples are done.

CABBAGE SALAD.

3 cups shredded cabbage 1 cup thinly sliced apple
 $\frac{1}{2}$ onion 1 cup salad dressing

Shred the cabbage with a sharp knife or slaw cutter, cut the apple, unpeeled, in tiny thin slices, slice the onion small, and mix together with the cup of salad dressing.

Beeswax Wanted

In big and small shipments, to keep Buck's Weed-process foundation factory going. We have greatly increased the capacity of our plant for 1920. We are paying higher prices than ever for wax. We work wax for cash or on shares.

Root's Bee-supplies

Big stock, wholesale and retail. - Big catalog free.

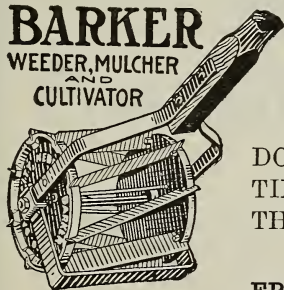
Carl F. Buck

The Comb-foundation Specialist

Augusta, Kansas

Established 1899

BARKER
WEEDER, MULCHER
AND
CULTIVATOR



Weeds and Mulches In One Operation

DOES BETTER WORK THAN A HOE—TEN TIMES AS FAST—SAVES TIME AND LABOR, THE TWO BIG EXPENSE ITEMS—EASY TO OPERATE.

FREE—Illustrated Book and Factory-to-User Offer

We want every garden grower to know just how this marvelous machine will make his work easier and increase his profits. So we have prepared a book showing photographs of it at work and fully describing its principle. Explains how steel blades, revolving against a stationary knife (like a lawn mower) destroy the weeds and at the same time break up the crust and clods and pulverize the surface into a level, moisture-retaining mulch.

"Best Weed Killer Ever Used"

LEAF GUARDS—The Barker gets close to the plants. Cuts runners. Has leaf guards; also easily attached shovels for deeper cultivation—*making three garden tools in one.* A boy can use it. Five sizes. Send today for book, free and postpaid.

BARKER
MFG. CO.
Dept. 10

DAVID CITY, NEB.

Gentlemen. — Send me postpaid your free book and Factory-to-User Offer.

BARKER MANUFACTURING CO.

Dept. 10

David City, Nebraska

Name _____

State _____

Town _____

R. R. No. _____ Box _____

Foresight

Is Better Than Hindsight

☞ Do you recall in times past that you have promised yourself to "buy early" the next season?

☞ Haven't there been instances where it would have been money in your pocket had you been ready for the bees?

☞ Let us suggest that you buy now for this season---and make it Root's goods. We sell them in Michigan.

*Beeswax
wanted. Send for our 1920
catalog.*

M. H. Hunt & Son

510 North Cedar Street
Lansing, Michigan

HE'S NOT—AROUND THE OFFICE

"What has happened to M.-A.-O.?"—F. Richardson, Ely, England, Dec. 27, 1919.

About enough's happened to him. He's demized, that's what he's done. Mr. A. I. Root was the demizer. He took M.-A.-O. by the scruff of the neck, so to speak, and sent him a-kin right out thru the back cover, as how I say he deserved, even if he was my cousin. He wont tell no more fishin whoppers in these columns, tho I seen him the other day tryin to make some double wall hives out of some old barn sidin (he wont buy a thing of Roots any more), and he says to me: Well, any way, I never went so far in Gleanins as to tell of a hen as what layed 16 eggs a day like Unele Amos done. He hit his thumb nail with the hammer just then and I cant quote him no farther. He's got to keep his language to hisself and the squash bugs. He cant print it here no more.

While I was mousin around in some of

(Continued on page 185.)

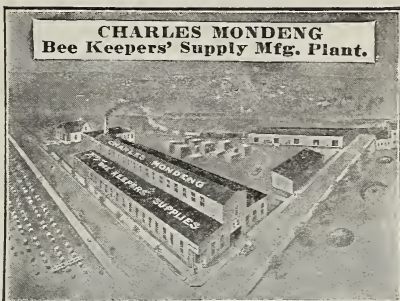
TREES and SHRUBS

Of Highest Quality at living prices. Plesing, prompt service. No money with order. We pay the freight and guarantee satisfaction. If interested, ask for 1920 Catalog. It explains.

THE PROGRESS NURSERIES

1306 Peters Avenue

TROY, OHIO

\$30,000 Bee Supplies
WORTH OF

All boxed ready to ship at once, 275,000 Hoffman frames; also Jumbo and Shallow frames, of all kinds, 100 and 200 in a box. Big stock of Sections, and fine polished Dovetailed Hives and Supers. I can give you big bargains. Send for a new price list. I can save you money.

Will take Beeswax in Trade at
Highest Market Price.

Charles Mondeng

146 Newton Ave., N. Minneapolis, Minn.

Forehand's Three Bands

THE THRIFTY KIND

We have been breeding these queens for the market for over a quarter of a century. They are bred from the imported Italians, but after years of select breeding we have brightened the color and retained the good qualities of their mothers.

After years of select breeding we have built up a strain of bees that are surpassed by none but superior to many. Our queens are thrifty, hardy, gentle, and beautiful.

PRICES

After April 1, to July 1

Kind	1	6	12	100, each
Untested	\$1.50	\$7.50	\$13.50	\$1.00
Select Untested	1.75	9.00	16.50	1.25
Tested	2.50	13.00	24.50	2.00
Select Tested..	4.00	22.00	41.50	3.35

Pound Bees from April 15 to June 30

Size	1	25 or more
One-pound package.....	\$3.00	\$2.75
Two-pound package.....	5.00	4.60
Three-pound package.....	7.00	6.45

Add the price of the queen wanted.

We guarantee pure mating, safe arrival and satisfaction.

W.J. FOREHAND & SONS -:- FORT DEPOSIT, ALA.
THE BEE MEN

AT SIOUX CITY, IOWA

YOU HAVE A MARKET
FOR YOUR HONEY AND
BEESWAX

WESTERN HONEY PRODUCERS
SIOUX CITY, IOWA

Address Dept. C

When you have honey for sale send sample and state the price you want delivered here.

You have a stock of Lewis Beeware at your command.

Send list of your wants and lowest prices will be quoted at once.

THAGARD'S ITALIAN QUEENS

I am booking orders for April to July deliveries. My Three-band queens are bred from imported stock; they are hardy, prolific, gentle, disease-resisting, and honey-producers.

Untested Queens	\$1.50	6, \$7.50	12, \$13.50
Select Untested Queens.....	\$1.75	6, \$9.00	12, \$16.00

I guarantee pure mating, safe arrival, and perfect satisfaction. Circular free.

V. R. THAGARD :- :- GREENVILLE, ALABAMA

ANNOUNCEMENT

Quality Queens for Spring Delivery

Book your orders now. Head your colonies with the best mothers to be had and take advantage of high honey prices. Beekeepers who insist on the best queens, reared by the best methods known, will be convinced after a trial order that mine have no superiors. Several years' experience on a large scale. Have perhaps reared more queens in each of the past two years than any other queen-breeder up to the present time. Buy queens from the man who specializes in queens.

First: That you may expect prompt

service. Next: That you can depend on getting full value for the price you pay. Because queen-work neglected to do something else is sure to show up

Prices Cash With Order are as Follows

	Before July 1			July 1 to Nov. 1		
	1	6	12	1	6	12
Untested	\$2.00	\$8.50	\$15.00	\$1.25	\$6.50	\$11.50
Select untested	2.25	9.50	18.00	1.50	7.50	13.00
Tested	3.00	16.50	30.00	2.00	10.00	18.50
Select tested..	3.50	19.50	35.00	2.75	15.00	27.00

somewhere, sometime. Last but not least: Know that you get what you order; buy from the man who advertises

one strain only from the same yard.

Doolittle's strain of Three-band Pure Italians have long been recognized as America's standard. Get them here and stock your apiaries with disease-resisters, from a location free of disease.

They are gentle and do justice in the supers. Satisfaction and safe arrival guaranteed or your money back.

No nuclei, except to accompany tested or select tested queens. Write for prices.

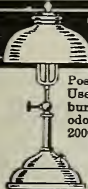
JENSENS' APIARIES :- PENN, (LOWNDES COUNTY) MISSISSIPPI

He's Not—Around the Office

M. A. O.'s litter and defunct effects at the office the other day I found the follerin, written a year ago or more in which he says:

E. R. Root, editor-in-chief, is sometimes a mighty promptitudinous sort. For example, he started on Jan. 20 to meet a lecture appointment on beekeeping at the N. Y. State School of Agriculture at Alfred, N. Y. He laid out in the frost and zero weather inside an Erie railroad passenger station almost all one night for a train that was to take him there, but which was four hours late and then didn't stop at the station where he was steadily freezin'. He saw it go by a-sailin' at 3 a. m., and was madder'n Balaam ever was at his faithful old mule—only he couldn't get at his means of transportation with a shillalah the way old Balaam could and did. But he had it on Balaam in gettin word home for help, for he routed out the local telephone man and telephoned to Medina, 15 miles away, to get a relief expedition to him

(Continued on page 187.)



The "BEST" LIGHT

Positively the cheapest and strongest light on earth. Used in every country on the globe. Makes and burns its own gas. Casts no shadows. Clean and odorless. Absolutely safe. Over 200 styles. 100 to 2000 Candle Power. Fully Guaranteed. Write for catalog. AGENTS WANTED EVERYWHERE.

THE BEST LIGHT CO.
346 E. 5th St., Canton, O.

100 EVERBEARING STRAWBERRIES Plants \$2.00 POST PAID

200 for \$3.85, 300 for \$5.50. Americus, Progressive, Superb, Francis, Peerless,—some of each while in supply. When sold out of one or more we will send the others. Catalog Free.

C. N. FLANSBURGH & SON, Jackson, Mich.

NEW ENGLAND

BEEKEEPERS will find a complete stock of up-to-date supplies here. Remember we are in the shipping center of New England: If you do not have a 1920 catalog send for one at once.

H. H. Jepson, 182 Friend St., Boston, Mass.

Hill's Evergreens Grow

Best for windbreaks and hedges. Protect crops and stock. Keep house and barn warmer—save fuel—save feed. Hill's evergreens are hardy, nursery-grown. Get Hill's free illustrated evergreen book and list of 50 Great Bargain Offers—from \$4.50 up per Thousand. 56 years' experience. World's largest growers. Write **D. HILL NURSERY CO.,** Evergreen Box 2462 Dundee, Ills. Specialists.



SWEET CLOVER

Easy to start. Grows anywhere. Not only a good fertilizer, but produces immense crops. Big money-maker. Crops worth \$50 to \$125 per acre. Greatest forage plant that grows. You cannot miss it by sowing our superior scarified seed.

Don't delay writing for our 1919 catalog (116 pages) and circular giving full particulars. We can save you money on guaranteed seed.

A. A. BERRY SEED CO., Box 966 CLARINDA, IOWA

QUEENS Bees by the Pound QUEENS

Booking orders now with one-fourth down, balance just before shipping. We have for several seasons shipped thousands of pounds of bees all over the United States and Canada.

From Wisconsin: "Last year when my old-time beekeeping friends heard that I had bought bees from a man in Texas they called me a fool; but now I have more bees and more money than any man in Green county. It is the talk of this part of the woods." (Same party has in his order again for over a thousand dollars' worth for spring shipping.)

From West Virginia: "The State Apiarist pronounced my queen one of the finest queens he ever saw. To say I am well pleased would be to put it

mildly. Will want more bees and queens in the spring."

Guarantee shipment to be made on time. Free circular explains, also gives prices on bees by Parcel Post, Nuclei, etc.

Prices f. o. b. Here, by Express.

1-lb. pkg. bees,	\$2.40;	25 or more...	\$2.16
2-lb. pkg. bees,	4.25;	25 or more...	3.83
3-lb. pkg. bees,	6.25;	25 or more...	5.62

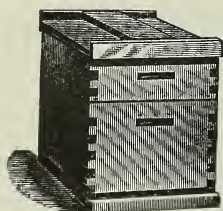
Queens.

Untested,	\$1.50 each;	25 or more....	\$1.35
Tested,	\$2.50 each;	25 or more.....	2.25
Select tested,	each.....		3.00

Add price of queen wanted when ordering bees.

NUECES COUNTY APIARIES -:- CALALLEN, TEXAS

E. B. AULT, Prop.



Early-order Discounts will Pay You to Buy Bee Supplies Now

Thirty-two years' experience in making everything for the beekeeper. A large factory specially equipped for the purpose ensures goods of highest quality. Write for our illustrated catalog and discounts today.

Leahy Mfg. Co., 95 Sixth St., Higginsville, Missouri.

"falcon"



I am a "falcon" bee

I live in a "Falcon" hive.

I am gentle and contented. I love to work in my home because everything is just as I like it.

The hive body is well constructed; that is why your honey crop is always plentiful.

Our queen is a "Falcon" queen—she is a three-banded Italian of pure healthy stock.

We all agree that our colony is successful, but so are all the "Falcon" hives in our apiary.

The other bees tell me when we meet in the fields.

Send at once for a "Falcon" queen, a hive, or any bee-supplies you need. Don't delay. Spring will soon be here.

"Falcon" bees and supplies always give the best results.

I know, because—I am a "Falcon" bee.

W. T. FALCONER MFG. COMPANY, FALCONER, NEW YORK

"where the best beehives come from."

HERE THEY ARE, MR. BEEKEEPER, AT NEWARK

Wayne County, New York, ready to answer your call, the best of everything!!

Just Read This List

Lewis Beeware, Sections, Shipping Cases, Frames, Hives, Hershiser Wax Press, and other supplies.

Dadant's Unexcelled Foundation, all standard weights and sizes. Also the Electric Wire Imbedder.

Bingham Uncapping Knives, including steam-heated with oil stoves and generators.

Bingham Smokers, all sizes, with genuine leather bellows.

Root's Extractors, all sizes of hand and power Machines.

Bee Books written by all leading authors in beedom.

All Sizes of Friction-top Pails and also 60-pound Cans, new and second-hand. Also Cement-coated Nails for nailing beehives and supplies.

All-sized Spools of Tinned Wire, Bee Brushes, Feeders, Queen-rearing Cages, Bee Gloves, Capping Melters, and all practical supplies you will need.

A Market for your Honey or Wax, and a plant to render your Old Combs and Cappings.

Over 1,000 Beekeepers took advantage of this Service Station at Newark in 1919, for the first time. Now *all together* for a greater 1920.

New Catalog Free, and Our Discounts Will Save You Money. Address

The Deroy Taylor Co., -:- Newark, Wayne Co., New York

He's Not—Around the Office

quick or it wouldn't be any use to send anythin but a coffin. He was brought back in a automobile at 5 a. m., madder'n a wet hen—mostly at the Erie railroad. He hurried off a day message to the dean of the agricultural



It aint the train as is mad. school at Alfred, N. Y., tellin him how it was he had to miss his appointment, and then went home to bed. Two days later he got a letter from the agricultural school dean at Alfred sayin his date there was Feb. 21 instead of Jan. 21, and he had time to make it yet if he'd hurry. The next week he started for a beekeepers' meetin in New Jersey

(Continued on page 189.)

BARNES'

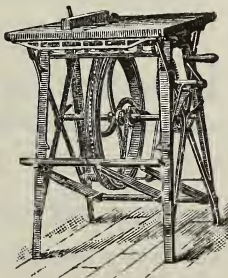
Hand and Foot Power Machinery

This cut represents our combined circular saw, which is made for beekeepers' use in the construction of their hives, sections, etc.

Machines on Trial

Send for illustrated catalog and prices

W F. & JOHN BARNES CO
545 Ruby Street
ROCKFORD, ILLINOIS



Dr. J. H. Black, Ft. Deposit, Ala.

Breeder of

Three-band Italian Queens

These queens are as good as can be had. They must be purely mated. Safe arrival guaranteed in United States and Canada.

Untested queens . . . \$1.25; 12, \$12.00
Select untested queens 1.50; 12, 15.00

Dr. J. H. Black, Ft. Deposit, Ala.

BEE SUPPLIES IN DIXIE

Dependable Goods with prompt service. Save time and transportation costs.

L. W. Crovatt, Savannah, Ga
Box 134.

MASON BEE SUPPLY COMPANY

MECHANIC FALLS, MAINE

From 1897 to 1920 the Northeastern Branch of The A. I. Root Company

Prompt and Efficient Service
BECAUSE—Only Root's Goods are sold. It is a business with us—not a side line. Eight mails daily. Two lines of railway.
If you have not received 1920 catalog send name at once.

HYBRID POTATO SEED

Every seed will produce a new VARIETY of potato, some white and some red, some early and some late, no two alike, 100 or more seeds in each package. One package and three months' subscription to our Magazine, "Special Crops," \$1.00.

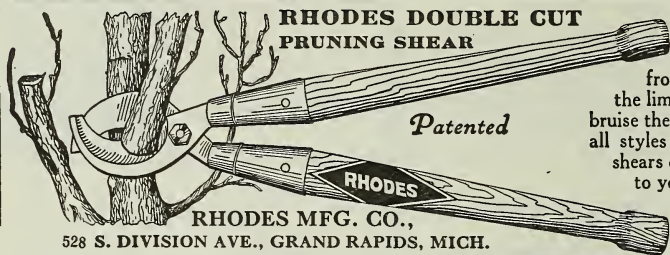
Address
PUBLISHER OF SPECIAL CROPS, SKANEATELES, N. Y.

BEEKEEPERS' SUPPLIES

QUALITY AND SERVICE

Now is the time to order your season's supply of Bee Material so as to have them ready for the honey flow. For lack of hives and other goods, you cannot afford to let your bees fly away. Bees are valuable. We have every thing required for practical beekeeping. Our goods for Ideal of quality, quality of workmanship. Our 1920 catalog is now ready to send out; send for one. It is full of good stuff.

AUGUST LOTZ COMPANY -:- BOYD, WISCONSIN



**RHODES DOUBLE CUT
PRUNING SHEAR**

Patented

**RHODES MFG. CO.,
528 S. DIVISION AVE., GRAND RAPIDS, MICH.**

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. All shears delivered free to your door.

Write for circular and prices.

**BANKING
BY MAIL
AT 4%**

BANKING BY MAIL at 4 per cent with this old established bank is perhaps easier than you realize.

Send your first deposit TODAY and we will mail your passbook, showing the amount of your deposit, and a supply of deposit slips. Detailed information on request. Safe—Convenient—Profitable.

THE SAVINGS DEPOSIT BANK CO.

A.T.SPITZER, Pres.
E.R.ROOT, Vice Pres. E.B.SPITZER, Cash.

MEDINA, OHIO

Central West Beekeepers

DON'T WAIT! ORDER NOW!

Spring is almost here. You can't afford to put off ordering your supplies until you need them. It will pay you to

BUY THEM NOW

Have you received our catalog? We have one for you. Send for it and order from us. Root goods are the best goods in the world, and our service is unsurpassed. We can help you with your beekeeping problems, too.

The A. I. Root Co. of Iowa

Council Bluffs, Iowa

He's Not—Around the Office

just one month late. I ain't commentin any, and there ain't no moral to this. E. R. Root's morals run in another direction than arrivin sure and before the whistle blows.

* * *

Mell Pritchard our skunkologist deserted us for Californy about a month ago and was praps goin out there to stay and raise queens and cure his asmy. He's home agin likin Californy climate about as much as he likes a skunk as what doesn't play accordin to his own prescribed odorless rules when histin him aloft by the tail. He got asmy out there about like a cow with a apple stuck in her eesofagus and that's worse'n he had it here. We are all glad

(Continued on page 191.)

WHEN YOU THINK OF BEEKEEPERS' SUPPLIES THINK OF INDIANAPOLIS

We carry a complete line of Root's goods and we solicit your trade. Our slogan, courteous treatment and prompt service. Catalog for the asking,

INDIANAPOLIS BRANCH

The A. I. Root Co. 873 Massachusetts Ave.

BEES We furnish full colonies of Italian bees in double-walled hives, single-walled hives, shipping-boxes, and three-frame nucleus colonies.

**I. J. STRINGHAM, GLEN COVE,
Nassau Co., N. Y.**

INDIANOLA APIARY

Will furnish 3-banded Italian Bees and Queens as follows: Untested Queens, \$1.00; Tested, \$1.50. Nucleus, \$2 per frame, queen extra.

J.W.SHERMAN, VALDOSTA, GA.

PATENTS

Practice in Patent Office and Courts
Patent Counsel of The A. I. Root Co.

Chas. J. Williamson, McLachlan Building,
WASHINGTON, D. C.

BACK NUMBERS OF GLEANINGS—A FEW BARGAINS LEFT IN VERY LOW-PRICED BEEKEEPERS' READING.

At 50c a year, we still have single copies complete for the years 1874, '76, '91 to '99, and '04 and '10. No other complete years left, and no unbound copies of the last three years left.

For a few days longer we will continue our great offer of this very best of beekeeping reading, namely, 50 copies for \$1.00, all of different dates, but of no particular year or month. But selection will be made from the years the purchaser may designate just so far as this is possible. Address

Gleanings in Bee Culture, Medina, O.

QUEENS.—Select three-banded Italians. Reared from the best mothers and mated to choice drones. Ready to ship May 1. Untested, one, \$2.00; six, \$9.00; twelve, \$16.80. After June 1, one, \$1.50; six, \$8.00; twelve, \$14.00. Select tested, \$3.00 each. Write for prices per hundred. Descriptive circular free.

Hardin S. Foster, Dept. G, Columbia, Tenn.

SAY, FELLOWS! Have you got the very yellowest bees? If you think so won't you please tell me your name and address?
Wildflower Apiaries, Trust Bldg., Little Rock, Ark.

PACKAGE BEES ITALIAN QUEENS

Dependable Quality
Prompt Service

2-lb. pkg. bees, \$4.65. 3-lb. pkg. bees, \$6.65; untested queen, \$1.35; select untested, \$1.65; tested, \$2.50. Terms: 25 per cent with order, balance ten days before delivery.

E. A. HARRIS, ALBANY, ALA.

3-Banded Italian Queens

MAY THE FIRST TO JULY THE FIRST

Untested	- 1, \$1.50	12, \$13.00
Tested	- 1, \$2.50	12, \$25.00

H. L. Murry -:- -:- Soso, Mississippi

Have You Received Our 1920 Catalog?

If not drop us a Postal at once. We manufacture

**BEEHIVES, BEEKEEPERS' SUPPLIES
MILLER'S CALIFORNIA FOUNDATION**

Send us your wax and slumgum

Miller Box Mfg. Co. -:- 201-233 N. Ave. 18 -:- Los Angeles, Calif.

Spring Will Be Here Before We Know It and It Will Not Be Long Before We See the First Robin

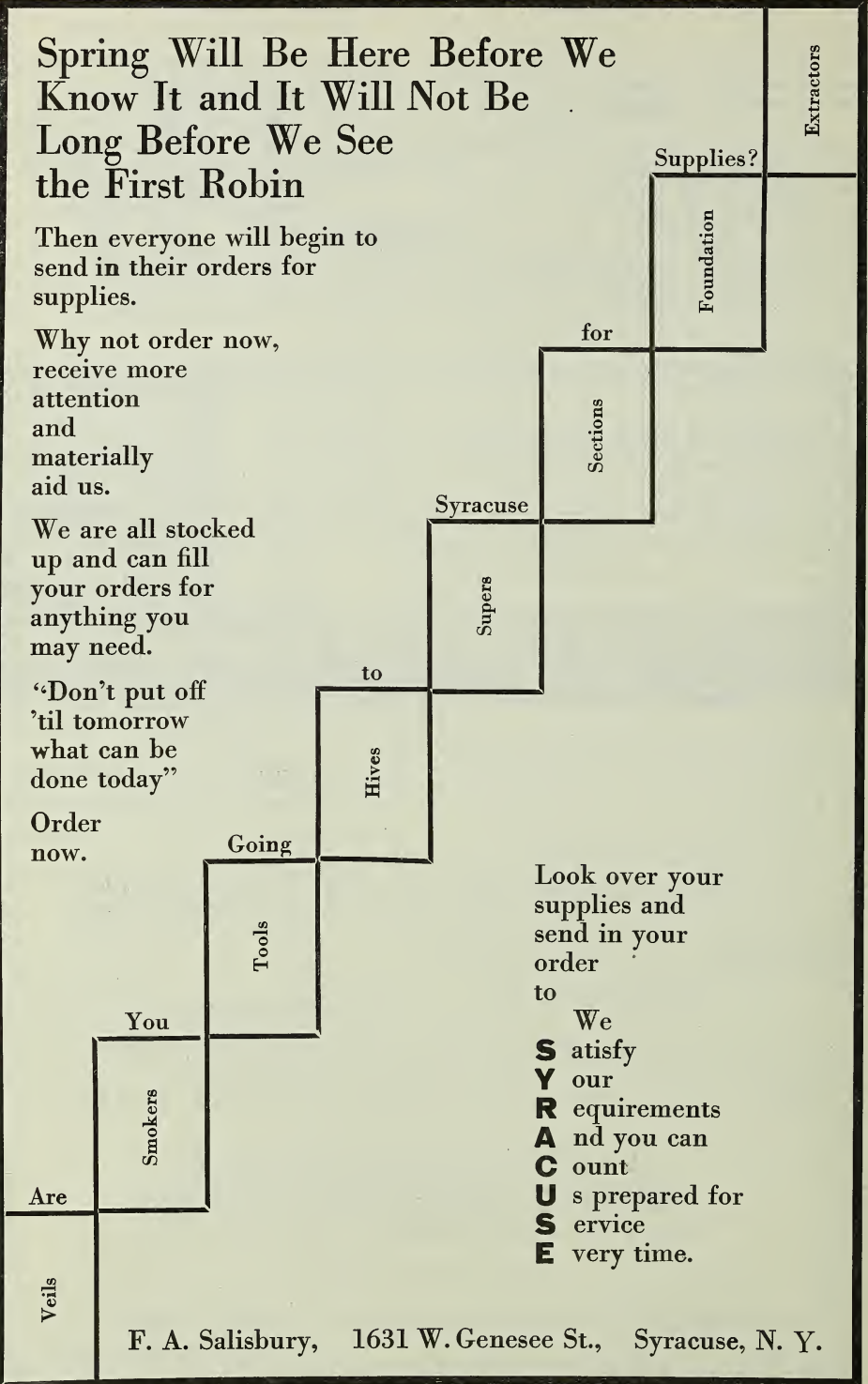
Then everyone will begin to
send in their orders for
supplies.

Why not order now,
receive more
attention
and
materially
aid us.

We are all stocked
up and can fill
your orders for
anything you
may need.

“Don’t put off
’til tomorrow
what can be
done today”

Order
now.



Look over your
supplies and
send in your
order
to

We
Satisfy
Your
Requirements
And you can
Count
Us prepared for
Service
Every time.

F. A. Salisbury, 1631 W. Genesee St., Syracuse, N. Y.

He's Not—Around the Office

hes home for hes a philosofer. He and poor old demized M.-A.-O. are great friends, and we will try to find out about both of em later and report what they are thinkin. If I could only get M.-A.-O. to mollify hisself and his language and make up with the Roots again. I wish he would write hisself. Lots write and ask what's become of him. I'll get Mell to try to meller him.

QUEENS THAT WILL PLEASE

Queens that are bred for Business, Farmer's Imported Stock, the very best for Honey-Gathering and Gentleness. They are not given to swarming and are Highly Resistant to Disease. They are Hardy, Long-lived. We are now booking orders for April to October. Untested Queens, \$1.50 each; \$7.50 for six. We Guarantee pure mating, safe arrival, and perfect satisfaction. Write for Circular,

THE FARMER APIARIES, RAMER, ALA.

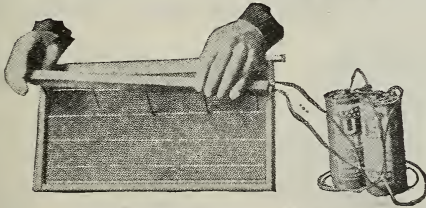
Bee Supplies

FALCON LINE
BEST GOODS MADE

Get our big discount
sheet before buying

C. C. Clemons Bee Supply Co
132 Grand Ave. Kansas City, Mo.

Electric Imbedder



Price without Batteries, \$1.25

Actually cements wires in the foundation. Will work with dry cells or with city current. Best device of its kind on the market. For sale by all bee-supply dealers.

Dadant & Sons Manufacturers Hamilton, Ills.

BE FOREHANDED

Mr. Beekeeper and anticipate your needs for the coming season and order early. Root's goods in stock at factory prices. Send for 1920 catalog.

F. D. Manchester R. D. No. 2 Middlebury, Vt.

AM BOOKING ORDERS NOW for

1920 QUEENS

Untested -- \$1.50 each; 25 or more, \$1.35
Tested --- 2.50 each; 25 or more, 2.25
Select tested, each - - - - - 3.00

Limited amount of bees for early shipment. My descriptive circular tells about it. Write me.

R. V. STEARNS, BRADY, TEX.

Florida Queens
and Bees

I will be fully ready to begin shipping bees and queens by April the 1st from my very best Italian stock at these prices: Two-frame nucleus with untested queen, \$6.00. Untested queens, \$1.50; tested, \$2.00.

Beekeepers' Supplies

I have a large and complete stock and prices are right. Get prices of my Cypress hives and hive parts, made of good soft Southern Cypress.

Dixie Beekeeper

This monthly publication deals with beekeeping and Dixie for beekeeping.

A sample copy free

J. J. Wilder, Waycross, Ga.

850,000 GRAPE-VINES

69 varieties. Also Small Fruits, Trees, etc. Best rooted stock. Genuine, cheap. 2 sample vines mailed for 25c. Descriptive catalog free. LEWIS ROESCH, Box 1, Fredonia, N. Y.

CORN

Pure Bred From Individual Stock Selections

Our stock is hand selected early in the fall—hand butted and tipped and hand shelled. Every ear we sell comes from fields making 60 bu. or more per acre. Let us increase your yield. We guarantee satisfaction. Write for samples and our Big Catalog FREE. Write us today.

Dave Peck Seed Co., 3115 Pa. Avenue, Evansville, Ind.



FREE

Kellogg's 1920 Strawberry Book

BEEKEEPERS—Write today for a copy of our valuable strawberry book and learn how easily and quickly you can increase your profits by combining Kellogg Strawberries with your bees. Each makes the other more profitable. This book pictures in colors and tells all about the world's latest and most wonderful strawberries, — Kellogg's Big Four and Big Late, Kellogg's New-Race, Kellogg's Everbearers, —also Kellogg Strawberry Gardens, including the world-famed

Kellogg's Everbearing Strawberry Garden

In thousands of homes throughout the country this garden is constantly reducing the H. C. L. and contributing substantial cash profits besides. It will do this, and even more, for you, because it blossoms and fruits almost continuously from June to November and its blossoms contain an abundance of honey-building material of which bees are particularly fond. The rapidly increasing demand for both strawberries and honey and the high prices of these foods, assure you at all times a ready market and big profits.

SEND TODAY FOR OUR FREE BOOK—Learn of the big profits others are making and put this big money-making combination to work for yourself this season. Your name and address written plainly will bring you this valuable book at once **FREE AND POSTPAID**.

R. M. KELLOGG CO., BOX 304, THREE RIVERS, MICH.

*A garden like
these
Will feed your
bees*



*You'll make big
money
From strawberries
and honey*



WE WILL TREAT YOU EQUALLY WELL

Mohawk, N. Y.

Dec. 30, 1919

*The A. I. Root Co.,
Medina, Ohio.*

*Gentlemen: I have dealt with the Roots
for 23 years, and know that honesty and
prompt answers are what have made the
Root Company what it is today, with good
supplies for proof of value received.*

*One time I sent an order by a neigh-
bor, and he sent 3c over, but the thought
of 3c was too much for The A. I. R. Co.
to pocket; so they used 2c and an envelope
and a slip with the statement to return the
3c. Hats off to the A. I. R. Co.*

[Signed] R. C. Morts.

THE A. I. ROOT CO., MEDINA, OHIO

A WORD TO THE WISE

Be on your guard for freight delays early this season. Uncle Sam is trying to move the 1919 grain crop. Only closed cars are taken for this project. Beekeepers' supplies are shipped in closed cars. This portends delays in securing your "Beeware." Early orders are likely to get through promptly. Better write your "Beeware" distributor today. Don't lose a honey crop because of freight delays.

"BEEWARE" INSURANCE

Did you read in the January bee journals about the seven "Signs of Progress" embodied in Lewis "Beeware" this year?

"Beeware" users will have assurance of all the honey in their locality this year. The "Beeware" sign stands for quality, workmanship, and Lewis service.

The "Beeware" distributor whose name is on the front page of your catalog can give you all that "Beeware" stands for. Write him!

If you have no "Beeware" catalog, a penny postal brings one.

Look
for



This
Mark

Branches and Distributors Everywhere

G. B. LEWIS COMPANY

Makers of "Beeware"

WATERTOWN

WISCONSIN